

# THE *Soybean Digest*

## **Soybean Chemurgic Coatings**

By M. F. Taggart

### **Potential Asiatic Markets for U. S. Edible Oils and Proteins**

By E. M. Deck



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**1959**

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**NUMBER 7**

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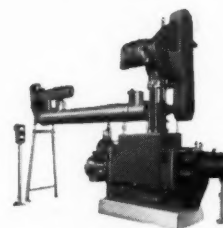
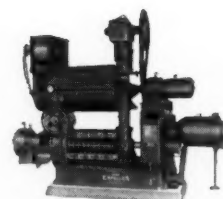
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HUDSON, IOWA

Vol. 19 May, 1959 No. 7

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## THE SOYBEAN DIGEST

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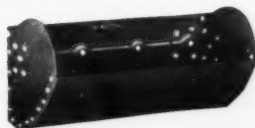
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Objectives of the American Soybean Association include the bringing together of all persons interested in the production, distribution and utilization of soybeans; the collection and dissemination of the best available information relating to both the practical and scientific phases of the problems of increased yields coupled with lessened costs; the safeguarding of production against diseases and insect pests; the promotion of the development of new varieties; the encouragement of the interest of federal and state governments and experiment stations; and the rendering of all possible services to the members of the Association.

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## EDITOR'S DESK

By GEO. M. STRAYER

### HAD SOME TIME FOR OBSERVATION

Twelve weeks in a hospital bed provide much time for thought. Never before having experienced hospitalization for more than a day or two at a time, it was a new experience to me. Now, out of the hospital but still on the list of those not permitted by the medics to resume work, I can still sit on the sidelines and watch the rest of the world at work.

One thing is very apparent as you sit on the sidelines and observe. The soybean industry is different than that of any other crop we produce commercially. Unlike corn and the feed grains, the soybean crop, with the exception of that used for seed, all moves to market. Some 85% of the corn produced never leaves the farm where it is grown—it is fed on that same farm. With the exception of wheat and cotton no crop moves into commercial channels as do soybeans.

Soybeans are desired for two ingredients. The oil is in plentiful supply here in the United States, but it is in relatively good demand in world markets. Soybean oil is the cheapest of the high-quality edible oils, thus there is in the world a market for expanding quantities as world populations increase and standards of living reach higher levels. Many highly populous areas of the world are greatly deficient in fat intake, and as earnings permit will demand more salad oil, more margarine or vanaspati, more cooking and frying oil. The potential in this field is tremendous.

High-quality protein is the other ingredient. An excellent demonstration of potential markets is the increased consumption of soy protein in livestock feeds here in the United States in recent years. And we have not yet reached the potential here at home, either. There are other areas of the world where protein is beginning to be recognized in light of its true values, and which offer potential markets for a sizable tonnage of U. S. soybean oil meal for livestock feeding.

And the vast potential market for soy protein for direct human consumption is virtually untapped. Of the millions of people in the world today a high percentage need much greater protein intake. Of necessity most of it must come from vegetable sources. When you start comparing vegetable proteins, soy ranks at the top of the list from the standpoint of efficiency, balance of amino acids, and low cost.

What shall we do about it? We have made a

start in promotional work on soybeans and soybean products. We have reached a very small portion of the potential customers through the market development programs of the American Soybean Association and the Soybean Council. But we have much farther to go! We have hardly scratched the surface on the work that should be done in this field. We need much more concentrated efforts in the areas already being served, and we need to extend the operations into many areas of the world not now being touched.

In my lifetime I expect to see 1 billion bushels of soybeans per year produced in the United States!!! Sounds fantastic—but it is coming.

### WERE TOO MANY ACRES IN 1958

The rate of domestic consumption and of export of soybeans and soybean products continues at record levels. Never before has the disappearance been so rapid. While there will undoubtedly be a carryover at the end of the crop year, it is not going to be as large as it had appeared earlier. With a reduced acreage in 1959, and with the carryover largely in CCC hands and based on a sale price which in turn is based on the 1958 support, it would appear that the free market price on the 1959 crop will be favorable. The present futures markets indicate that.

It is unfortunate that we took such a large step forward in production in 1958. Had we continued to increase our production gradually, in steps of perhaps 25 million additional bushels per year, we would have had no disposal problems. To increase production by 100 million bushels—25% of the crop—in 1 year is more than we can hope to absorb. We are doing a remarkable job of whittling away at the supplies, as figures carried elsewhere in this issue indicate. 1958 will go down in history as a year to be remembered in soybean circles.

We must remember that soybeans contain oil and protein—the two things that the world food economy needs in quantity. If we will continue to merchandise our products into the markets of the world on an intelligent basis, we can continue to increase soybean production through a period of years without accumulating surpluses. We must work at it intelligently—and hard.

And in the meantime a smaller soybean acreage in 1959 comes as a blessing—to enable us to catch up on the gap between production and market utilization.



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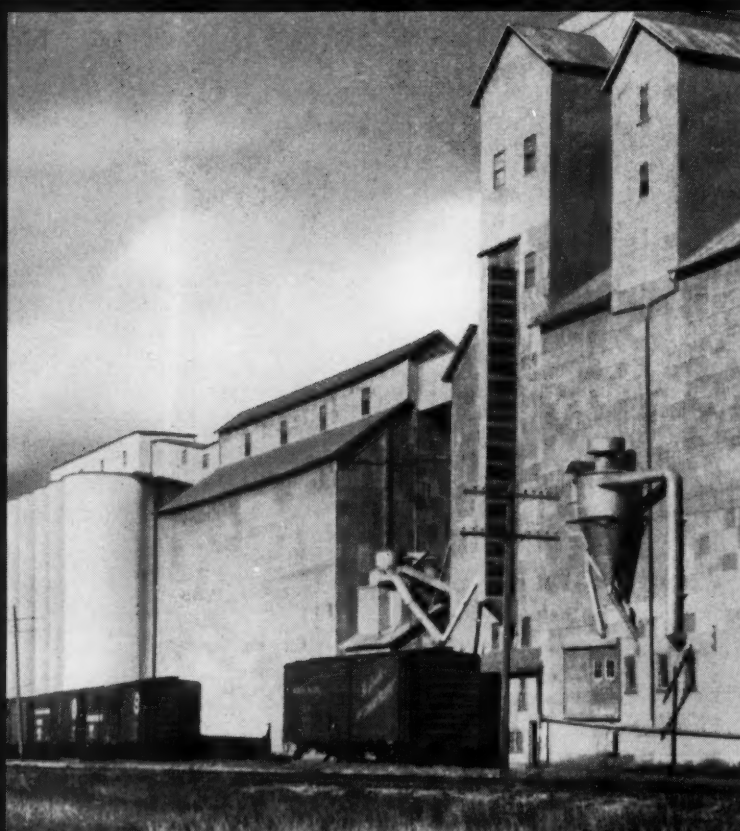
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# THE NEWS IN BRIEF

## THE CROP, MARKETS AND OTHER ITEMS OF NOTE

### **Record Soybean Meal Production**

Production and use of soybean meal is breaking all records this year. Output has been running at a rate of more than 800,000 tons a month, with 9.4 million tons the estimate for the year. This compares with 8.2 million tons last year.

The prospect is for a continued high rate of meal production in the 1959-60 marketing year, even if the soybean crop is somewhat smaller than the whopper of 1958. USDA is estimating, tentatively, a crush of around 400 million bushels (same as this year) because of the expected carryover of 75 million bushels this season.

Quoting Louis Brewster, General Mills, Inc., Rossford, Ohio, in an April market letter: "All statistics to date strongly indicate that processors will have to purchase about 50 million bushels of beans from CCC. . . April-May-June crush should continue at record levels if the demand—particularly the 50% meal—holds.

"Due to the plant shutdowns beginning in July, prices may hold fairly steady at around \$60 and \$70 Decatur for 44% and 50% protein meal.

"The increased animal population has to be fed increased amounts of high energy feeds to accommodate the ever-increasing human population demanding more and better meat products at lower prices. This can be done only by higher levels of proven high quality ingredients . . .

"In my estimation, the soybean oil meal market has some very bright days ahead."

### **Still Look For Large 480 Exports**

The general prospect for large volume of P. L. 480 exports is still holding at a high level. It's figured at around 1.2 billion pounds for the year by USDA on top of around 300 million pounds commercial exports. However, there has been considerable delay in getting the program for Spain and Turkey under way.

Japan has set up an import budget of 429,000 metric tons (15.7 million bushels) of soybeans for the first half of the 1959 fiscal year which began Apr. 1, according to our sources. The import price is reported at \$93 a ton or \$2.53 a bushel.

A purchase authorization for about 715,000 pounds of soybean or cottonseed oils under P. L. 480 was issued to Iceland during April. Sale contracts for the oil made between Apr. 10 and Nov. 30 will be eligible for financing.

About 600 tons of soybeans have been exported to Venezuela in recent months and there is considerable additional business to be done there due to a shortage of meal for feed and the demand of processors for beans on which to operate their plants.

The sale for export of about 50 million pounds of crude and once refined cottonseed oil for delivery at Houston, Tex., was announced by Commodity Stabilization Service during April. Price was 11.7¢ for crude and 12.56¢ for refined.

### **Reports on Soybean Acreage**

There was not much tendency on May 1 for our observers to question the USDA March planting intentions report which indicated a 7% drop in 1959 acreage..

In spite of some reports in the trade that some farmers are switching back from other crops and plan to plant more soybeans than earlier planned, there was not much tendency as of May 1 for our observers to question the USDA March planting intentions report which indicated a 7% drop in 1959 soybean acreage. Most still expect a cut in soybean acreage in most Northern States, particularly in Iowa and Minnesota.

Oats were planted about on time most places, the unanswered ques-



tion being the size of the acreage planted. Weather of course may materially alter the picture so far as soybeans are concerned.

Some USDA officials believe improvement in soybean market prices and the strong futures market for the summer months **may have some influence in boosting soybean acreage planted this spring.**

Keith Bilbrey, Mississippi County, Ark., agent, Blytheville, sees a 12% to 15% decrease in soybean acreage due to an expected shift to cotton. "Production will continue large here but I never expect this county to produce 8 million bushels any one year again. We may never have that great an acreage (295,000) again, and seldom expect that good a producing year." Mississippi County apparently produced the alltime record crop for a single county in 1958.

Quoting Russell S. Davis, Clayton, Ill., "There is still a lot of indecision as to what the corn and soybean acreage will be. Wet weather is delaying spring plowing. Most of the intended oat acreage was seeded, but the total seems low by previous standards. Farmers are keenly aware of the need to push up their earnings. They may **plant a bigger acreage of corn and beans.** There is a growing tendency to pour on the fertilizer and forget about the crop rotation."

Dale K. Luther, Buffalo County agent, Kearney, Nebr., says the soybean acreage in the county, all irrigated, will be down 50%. The acreage will go mostly to corn with some diverted to irrigated pasture.

J. G. King, Texas Agricultural Experiment Station, Lubbock, looks for a 40% to 50% increase in the irrigated acreage of soybeans in the High Plains of Texas this year.

**Some  
Soybeans  
Planted**

Soybean planting was 50% completed in Mississippi County, Ark., and 10% to 15% elsewhere in the state Apr. 27, according to the Weather Bureau. Some early seeded soybeans were up to a stand and cultivation was started.

O. H. Acom, Wardell, Mo., reported that 50% of the crop was planted in Pemiscot and New Madrid Counties as of Apr. 20. Soybean planting was started in the central coastal plain of North Carolina and a few had been planted in South Carolina and Georgia in late April.

**Increase in  
Mellorine  
Production**

Production of mellorine and other frozen desserts made with fats and oils other than milk fat during March was estimated at 3,405,000 gallons by USDA. This was 21% more than in March 1958. Output the first 3 months of this year totaled 8,275,000 gallons, 10% larger than the first quarter of last year.

Identical bills to outlaw mellorine in Iowa were stalled in sifting committees in both the Iowa House and Senate after being reported out by the agriculture committees of both houses. The bills were backed by the dairy interests of the state but opposed by the American Soybean Association. **An attorney general's ruling last January was that sale of mellorine is legal in Iowa,** and some sales are being made in the state for the first time.

**Convention  
Meeting  
Dates**

The Midsouth Soybean and Grain Shippers Association will hold its 6th annual convention at the Hotel Peabody, Memphis, Tenn., Aug. 11 and 12, but the dates were changed to avoid a conflict with the American Soybean Association's convention in St. Louis on those dates.

The committee for the ASA convention is: O. H. Acom, Wardell, Mo., chairman; C. G. Simcox, Assumption, Ill., and John H. Butterfield, Pana, Ill.

The National Conference of Commodity Organizations went on record in favor of a 5-year extension of P. L. 480 in Kansas City earlier this month. NCCO also favored taking 65 million acres of land nationwide out of production.





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## Soybean Meetings in St. Louis Aug. 10-12

THE JOINT annual meetings of the American Soybean Association and the National Soybean Processors Association will be held at the Sheraton-Jefferson Hotel in St. Louis, Mo., Aug. 10-12, Geo. M. Strayer, ASA executive vice president, has announced.

The processor group will meet Aug. 10 and ASA the following 2 days. This will be ASA's 39th annual meeting and the sixth consecutive meeting held in conjunction with the Processors Association.

The last time the American Soybean Association met in St. Louis was in 1953, also at the Jefferson.

Taking note of the worldwide surge toward a better diet with more fat and protein, the convention com-

mittee has adopted as its convention theme this year, "The World Needs More Soybeans," and plans for a great program are already taking shape.

### The Hotel

The 800-room Sheraton-Jefferson is one of America's outstanding hotels. The largest hotel in St. Louis, its accommodations for convention headquarters are ample but compact.

The hotel is noted for its comfortable and excellent facilities. It is completely air conditioned.

Conveniently located to the downtown area, the hotel is readily accessible by automobile, train or plane. The main airlines have their offices in the hotel.

The convention will occupy the mezzanine floor. Meetings will be in the Crystal Room, which seats 350.

Much of the mezzanine floor will be given over to exhibit space this year, as shown on the diagram below. All exhibit space will be on the mezzanine and easily accessible to the meeting room.

Connections for gas, electricity, steam or water are available in the booths.

For further information about the exhibits contact: Geo. McCulley, business manager, American Soybean Association, Hudson, Iowa.

### Entertainment

St. Louis is an ancient and picturesque city, Missouri's largest and the nation's eighth largest.

In addition to the annual ASA banquet Tuesday evening, Aug. 11, there will be no lack of something to do evenings.

The St. Louis Cardinals will be in town. A block of tickets is being reserved for the St. Louis-San Francisco ball game at Busch Stadium Monday evening, Aug. 10.

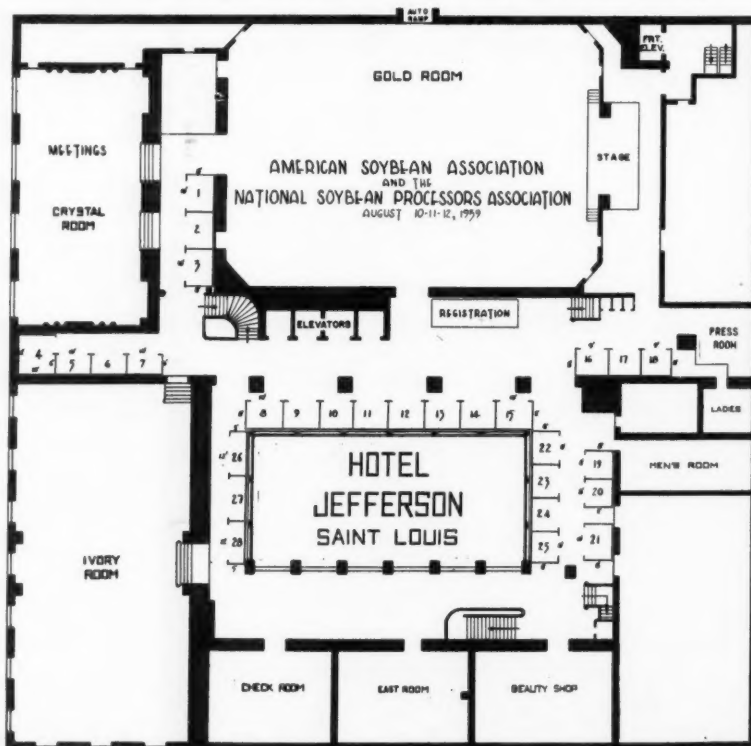
Convention attendants can also obtain tickets to "Call Me Madam," the famous musical based on the life of Pearle Mesta, at the outdoor St. Louis Municipal Opera both Sunday and Monday evenings.

The noted excursion boat, the S. S. Admiral, will offer a cruise with dancing the night of Aug. 12, at the close of the convention.

You can see Cinerama, at the Ambassador Theatre, if you wish.

Other famous attractions in St. Louis are St. Louis Zoo and Missouri Botanical Garden or Shaw's Garden.

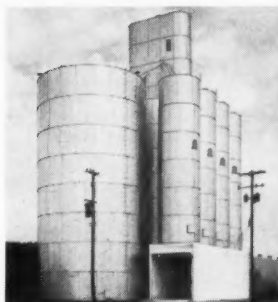
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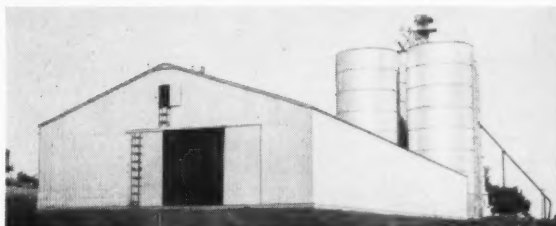
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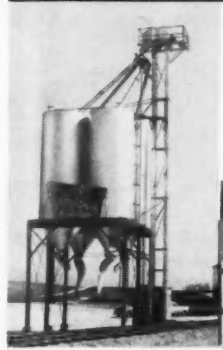
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Mr. Deck was a member of the survey team sent to Asia last fall to determine potential markets in a number of Asiatic countries for U. S. oil crops and their products.

# Potential Markets for U. S. Edible Oils and Proteins

By E. M. DECK

Anderson, Clayton & Co. Foods Division  
Dallas, Tex.

**A**ROUND the world in 60 days—surveying potential markets for American edible fats and proteins such as those from cottonseed and soybeans—this was the intent and purpose of a survey made under a contract of the Soybean Council of America, Inc., with the Foreign Agricultural Service of the Department of Agriculture. The team making the survey was composed of George Strayer, executive director of the Soybean Council of America, Inc.; Volorus H. Hougen, fats and oils marketing specialist of the Foreign Agricultural Service; and the writer, representing the National Cottonseed Products Association, Inc.

Prior to World War II, the United States was a net importer, but currently we are the largest exporter of edible fats and oils in the world. This is due mainly to the great increase in the production of soybeans.

The finding of new markets for soybeans is due, in part if not largely, to the fine work being done by the Soybean Council of America, Inc., in trade development work in a number of foreign countries such as Italy, Spain, Germany and Israel. These trade development programs are financed by funds supplied by (1) the Soybean Council of America, Inc., (2) the Foreign Agricultural Service — from funds which were generated in these countries by the sale of American commodities under Public Law 480, and (3) the local industries and trade groups in these various countries. Up to now, all of the soybeans have been exported for dollars—none sold under P. L. 480.

## Hong Kong

After we visited Japan to observe the operation of the Japanese American Soybean Institute, which is the operating agency for an export program sponsored by the American Soybean Association, we went to

Hong Kong where our survey started.

Since Hong Kong is largely a Chinese settlement, large quantities of soybean foods are manufactured and consumed—such as soya sauce, soya curd, soybean sprouts, soy milk (which is sold as a hot and a cold beverage), etc. Most of the soybeans are imported from Communist China—in 1957 10,600 tons were from China compared to 522 tons from the United States.

Any soybean food products for export to the United States must be made from soybeans which did not originate in Communist China, so the soybeans for this purpose are imported from the United States and from Thailand.

There are no oil mills or shortening plants in Hong Kong. Shortenings, oil, margarine and butter are all imported. Most of the oil comes from Japan and much of the butter and margarine from New Zealand and Australia.

There appears to be a small but growing market for feed grains and proteins in the Hong Kong area, as the raising of livestock—especially poultry and swine—is increasing.

The consumption of soybeans in Hong Kong will grow as the population increases and the standard of living is raised. The United States could probably obtain a much larger share of this market by obtaining lower ocean freight rates for bagged beans; shipping the beans in bulk to some port such as Japan, where they could be cleaned, bagged and transhipped to Hong Kong as needed; selecting better quality beans for export (the indications were they would pay as much as \$16 per metric ton premium for good quality beans); providing longer-term credits to enable the importer to sell and collect for the beans before paying for them; and encouraging greater

imports of manufactured soybean products in the United States, as these products normally require U. S. beans for their production.

## Thailand

Thailand is the only country we visited which is considered self-sufficient in food supply and which exports edible oilseeds in any appreciable quantity. It is also the only country in Southeast Asia that apparently has land available that can be put under cultivation, and has the potential for great increases in the production of oilseeds.

In 1957, Thailand exported approximately 65,000 metric tons of oilseeds. The chief exports were coconut as copra, castor beans, peanuts, kapok seeds and cottonseed, with some export of sesame seed and soybeans. It is considered unlikely that the production of coconuts and copra will expand much beyond present levels.

A large majority of the Thai people does not obtain a balanced diet, even though the country is considered self-sufficient. There is a great need for some means of better distribution for proteins, fats and oils to give the people a balanced diet to improve their health and productivity. There is a great need for nutritional education. Trained home economists and nutritionists are needed to teach the people in the cities and in the rural areas balanced diets—with the main hope being to teach the children and train and educate young mothers. Trade development programs in Thailand similar to those now being carried out in Japan by the Japanese American Soybean Institute, which include nutritional education, would probably increase their consumption of fats and of proteins.

Lard is the major source of fat for



direct consumption by the people of Thailand, with coconut oil being the major vegetable oil sold and consumed. Apparently soybean food products as they are currently made are acceptable only to Chinese and Japanese people. The Thai people do not like them. There is a great need of more protein in the diet in Thailand and, in order to get the people to eat low-cost soybean proteins, it will be necessary to develop foods that will be acceptable to them. There is very little oilseed crushing in Thailand now, but there is an indication that the oil milling and crushing industry is expanding. There is considerable interest in the production of rice bran oil by both governmental and tradespeople. Now huge quantities of rice bran are produced and used for livestock feeding.

There appears to be very little hope for immediate markets for either oil or protein in Thailand from U. S. sources.

### Singapore

Singapore has a population of about 1.2 million people. The population is increasing and the standard of living is rising, so this should provide an expanding market. Soybean oil should be considered for this market, so long as it is the lowest priced oil produced in the United States. It will probably be necessary, because of high ocean freight rates and the long distance of shipping, to export our lowest priced oil in order to be competitive with oils grown in this area of the world.

Coconut oil, peanut oil, palm oil and cottonseed oil are the vegetable oils most generally available. The major fats used are lard and coconut oil. It was generally agreed in the trade that coconut production for oil will not increase in this region, including Singapore, Malaya, Indonesia, Ceylon and North Borneo. The tradespeople seemed generally agreed that total oil production, with the exception of palm and palm kernel oil, will not increase in this area in the foreseeable future. Therefore, as the market increases, it will be necessary to find other edible oils at competitive prices.

Singapore is now importing approximately 22,000 tons of soybeans and 15,000 tons of oilseed cake and meal per year, not including copra cake. Of the 22,000 tons of soybeans imported, 15,000 tons came from China, about 5,000 tons from Viet Nam and 2,000 tons from other sources.

There are 900,000 residents of Singapore of Chinese ancestry, which indicates that it is a good market for



PHOTO of U. S. survey team and members of the Pakistan Oilseed Crushers Association was taken following a luncheon at Kurachi, West Pakistan. At far left is USDA's V. A. Hougen. Third from left, front row is ASA's Geo. M. Strayer. At his left is Aly Rangoonwaha J.P., chairman of the Burma Oil Mills Ltd. and president of Pakistan Oilseed Crushers Association. Just back of him is E. M. Deck, author of this article. And in center is Donald McDonald, American agricultural attache for Pakistan.

soybean food products. Soybean oil, however, is entirely new to this part of the country and considerable education will be required on its qualities and processing to successfully market it in Singapore.

The manufacture of mixed feed for livestock is getting started. The indications are that it will grow rather rapidly as the production of poultry and swine increases. There should be a market for soybean and cottonseed meals here, as it is believed that the higher quality U. S. meals could be competitive to the Chinese produced meals which lack the growth promoting properties of U. S. meals.

Through bulk handling of oils and oil meals, the indications are that—at present prices—soybeans, soybean oil meal and soybean oil could be competitive in this expanding market.

Our group was convinced that much greater opportunities for markets for these products exist here than was anticipated. It is recommended that further study be given to potential markets in Singapore and this area of the country.

### Malaya

The Federation of Malaya, in Southeast Asia, is predominantly an agricultural country. Large quantities of rubber, rice, palm oil and coconut oil are produced. The diets, especially of the rural people, are very deficient in both fats and proteins. The Malayan people do not like foods made from soybeans—partly because they were forced to eat them during the war and think of them as Chinese or Japanese foods. However, there is

a sizable Chinese population in Malaya and the soybean foods produced for them are made mainly from soybeans that have been imported. One importer ships in about 300 tons of soybeans per month.

It was generally agreed by those we talked to in the government and in trade that:

1—Copra and coconut oil production in this area of the world will not increase, but will probably decrease. As the demand for oil increases it will have to be satisfied from sources other than copra.

2—The tonnage of palm oil available for domestic use and for export is going to increase during the next decade, due principally to increased production per acre. It is not anticipated that there will be any material increase in acreage, but new and improved varieties are now being planted that will increase the yield.

3—There is currently a potential market for cottonseed and soybean oil—hydrogenated and unhydrogenated—for use as cooking oils and in margarine to replace the high-priced coconut oil now being used in these products.

4—There is a potential market for soybeans and soybean meal, if they can be delivered to Malaya at prices competitive with these commodities from Chinese sources.

To be competitive would require lower ocean freight rates, better credit terms and quicker delivery after date of purchase. Soybeans and soybean meal might have to be shipped in bulk to some Southeast Asia central point, for bagging and

## Soybean oil is entirely new for India and if imported they will need technical assistance.

transshipment to other countries in that area.

There seems to be a reasonable opportunity for developing sale of soybeans and soybean oil to Malaya, and an opportunity for market development and promotional work on these products in this area.

### Burma

Burma has a deficit in oils, fats and proteins; and there is no indication that production of oilseeds is likely to catch up with the needs. There is some production of peanut, cottonseed, sesame and soybeans, but not enough to supply consumer demands for fats and oils. The production of soybeans has been increased in North Burma, but is still very small. The population of Burma is about 20 million, and the fat consumption is about 10 pounds per person per year.

The P. L. 480 program concluded with Burma sometime ago included \$1.9 million for the purchase of vegetable oil. This program and the current high price of coconut oil offer an excellent opportunity to introduce soybean oil to the Burma market and to acquaint the tradespeople and buyers with the quality of this oil.

Russia and Communist China are using trade as an implement for political warfare in Burma. This is evidenced by the fact that the prices of soybeans, soybean oil and peanut oil are placed on a political basis rather than on an economic basis. Peanut oil now coming in from China is quoted at approximately 17½¢ per pound, basis Rangoon. It is believed that U. S. soybean oil, but probably not cottonseed oil, can be delivered Rangoon at a competitive price.

Lower ocean freight and bulk handling of vegetable oils and proteins, when possible, will be a big factor in the competitive pricing of these U. S. products. At present, Burma has no bulk handling facilities. This is the same situation that exists in other countries of Southeast Asia.

### India

India is a relatively new nation, with a population of 360 million, expecting to grow to 500 million by 1975. Her people have lived on a subsistence diet level, with oils and oilseed supplies being placed in world trade channels as part of the former Colonial program. Their consumption of fat is among the lowest in the world—now about 10 pounds

per capita. Today, India is attempting to raise dietary levels as income will permit. They hope to increase fat consumption to a minimum of 20 pounds per capita.

India was traditionally one of the world's largest producers and exporters of oilseeds and vegetable oils, but no longer has fats and oils for export. Due to increases in population and a slight improvement in the standard of living, India is consuming all of the fats and oils now being produced. It is generally agreed by both governmental and tradespeople that the production of oilseeds cannot be increased significantly. The only increase in fat and oil production will be in the increase of yields of seeds per acre and increased recovery of oil from the seeds by improved processing methods.

If the consumption of fats is increased from 10 pounds per capital to 20 pounds per capita, along with the expected increase in population, it would increase the total demands of the Indian economy for oil from the current 1.5 million tons to a contemplated total of 5.4 million tons by 1975. India would go from a current self-sufficient level in fats and oils to a net deficit of about 2.2 million tons.

It is contemplated that by 1976 the use of oils for the production of vanaspati will increase from 300,000 tons per year to 2,098,000 tons, the use of liquid oil will increase from levels below 1 million tons to approximately 2 million tons; and the consumption of oils for other uses—including soap, paint, inks and miscellaneous uses—is expected to rise to 1,369,000 tons from the present level of less than 400,000 tons for inedible use.

Peanut oil is the major vegetable oil used in India today, followed by mustard and rapeseed oils, cottonseed oil, sesame seed oil, coconut oil and other miscellaneous oils. The oilseed crushing industry is very widespread, decentralized and inefficient.

Most oil and oilseed prices in India are above world prices. Coconut oil prices are extremely high at the present time due to a shortage of supply. It is generally agreed by the tradespeople in India that the production of coconut oil in Southeast Asia, including Indonesia and the islands of that area, is not likely to increase and may decrease. Some other edible oil will have to be found to replace this oil. The shortage of supply of coconut oil is a problem for soap manufacturers since it is

the only oil they have available in quantity for use in soap to obtain the desired lathering properties.

Soybean oil and cottonseed oil would fit into the Indian economy, if competitive in price. Soybean oil would probably be more competitive than cottonseed oil.

The survey team agreed that the most logical place to start the use of soybean oil in India would be in the manufacture of vanaspati (made from hydrogenated oil) and for use in blending with rapeseed and mustard seed oils for use as a cooking oil. The indications were that the government officials and the vanaspati manufacturers would look favorably on the possibilities of importing soybean oil for trial use in vanaspati. If trial shipments were satisfactory then there would be an opportunity for importing soybean oil into India, especially in between their oilseeds harvest seasons when the prices of the domestic oils are very high.

Due to the lack of storage facilities for seed and oil, the price of peanut oil and cottonseed oil is quite low at the time they are being harvested. Then in between harvests the price increases sometimes as much as 100%. The vanaspati manufacturers indicated that if soybean oil could be shipped during the in-between harvest season, it might be of a great benefit to them in leveling out the price of oil during the different seasons of the year.

Soybean oil is entirely new for India and, if it is imported, they will need technical assistance on processing, handling and merchandising this product.

It is recommended that every effort be made to get as much oil as possible imported into India under some program such as P. L. 480 so that the Indian people will become familiar with U. S. oils and higher fat diets. Once the demand for higher fat diets, including the use of U. S. oils, is created in India there will be a demand from the people for oil to be imported in sufficient quantities to supply their needs and desires.

If, when this time comes, there are no P. L. 480 funds or other similar means of purchasing U. S. oil, it is quite likely that the Indian government will, in some way, find the foreign exchange with which to import the fats and oils. Many of India's exports go to European countries and are paid for in pounds sterling or German marks. The recent changes in the convertibility of currency may

enable India to convert some of these funds to dollars for the purchase of U. S. fats and oils. This possibility should not be overlooked.

### Pakistan

Pakistan has a population of approximately 85 million and is divided into two parts, East and West Pakistan. Here as in India they need improved processing equipment, particularly solvent extraction plants, in order to increase the yield of oil during the processing of oilseeds. Also, as in India, there is a shortage of foreign exchange with which to buy the necessary equipment for oil mills and solvent extraction plants. A number of Pakistanians would like to enter into joint ventures with American firms in order to obtain equipment for building plants.

In East Pakistan the main crops are rapeseed and mustard seed oil, with some sesame seed oil; while in West Pakistan the main crops are cottonseed oil, flaxseed oil, linseed oil and some peanut oil. They raise some coconut, but the production of this oil is not likely to increase and the people of East Pakistan were in agreement with other Southeast Asia countries; namely, that the production of coconut oil in Southeast Asia is likely to decrease rather than increase. It will have to be replaced with some other types of edible oil.

Both East and West Pakistan are short of edible oils, and it is necessary for them to import oils to supplement their own production. It was generally agreed by government officials and industrial people in Pakistan that, while they are trying to increase their production of oilseeds, they will be unable to increase it enough to take care of the demand for fats and oils now or in the years to come. As the population increases, and as the standard of living goes up, the demand for oil will increase and the deficit between production and consumption will become greater.

Pakistan has negotiated an agreement with the United States under P. L. 480 for the purchase of 20,000 tons of vegetable oil, 10,000 tons each for East Pakistan and for West Pakistan. Pakistan is in great need of export trade in order to generate foreign currency for the purchase of oils. At present, jute and cottonseed seem to be their main exports. Anything which can be done to increase exports from Pakistan will be of benefit to the United States.

### Summary

Coconut oil production in Southeast Asia, one of the major supply areas for this oil, is not likely to in-

crease, but will probably decrease. Other edible oils must be found to supply the growing demands and need for edible oils in Southeast Asia being created by increases in population and standard of living.

With the exception of Thailand, none of the Southeast Asian countries will be able to increase their production of oilseeds significantly.

There is a continually expanding potential market for large quantities of edible fats, oils and proteins in Southeast Asia. The rate of development of this market will depend on (a) lower ocean shipping rates to keep prices competitive, (b) U. S. dollars available in these countries (more exports to the United States are needed to obtain dollars), (c) the competitive prices of the cottonseed or soybean oil, and (d) aggressiveness of U. S. suppliers to keep products competitive and trade development work to develop techniques for handling and use.

The indications are that the United States has the largest surplus and is the largest exporter of edible oils in the world today, and will probably continue in this role for some time. Southeast Asia could, in the not-too-distant future, develop into a large market for American vegetable oils and proteins. The potential is there to be developed.

### Announce Iowa Master Soybean Growers Contest

THE 18TH ANNUAL Iowa Master Soybean Growers Contest has been announced by the Iowa Crop Improvement Association. The contest is open to members of the association.

Local contests will be conducted by sponsoring organizations. Names and addresses of contestants must be forwarded to the Iowa Crop Improvement Association on or before July 31 to be eligible for the state contest.

Yields will be calculated from an area of 2 or more acres.

The contest has been held every year since 1941. The record yield to date was 60.78 bushels per acre by Molgaard Bros. of Dallas in 1952, with second highest yield 54.02 by Revialo Rex of Boone in 1953.

The top yield in the contest has been above 50 bushels 7 years, between 40 and 50 bushels 4 years, and between 30 and 40 bushels 6 years.

When writing to our advertisers please mention the Soybean Digest.

### USDA Holds New Orleans Conference on Gossypol

MORE THAN a quarter of a century of accumulated knowledge about gossypol and other pigments of cottonseed was pooled when scientific leaders in a number of research areas met recently for a conference on the chemical structure and reactions of gossypol and non-gossypol pigments of cottonseed.

The conference took place at the U. S. Department of Agriculture's Southern Utilization Research and Development Division in New Orleans, La.

### Large Profits in

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TOP QUALITY exterior paint at left. Inferior paint at right. Panels have been exposed for a considerable period of time.

## Soybean Chemurgic COATINGS

By M. F. TAGGART

Director of Research, O'Brien Corp., South Bend, Ind. From a paper presented at the Chemurgic Conference at Chicago

FELLOW chemurgists, our espoused philosophy is nearing the quarter century mark in age. Named by William Hale in 1934 and crystallized at that history-making first conference at Dearborn, Mich., in 1935, chemurgy has come a long way since.

Then and there I received my inspiration to prosecute the credo of chemurgy, which is—to find industrial uses for farm products through chemistry. Being a chemist for the then O'Brien Varnish Co. at that time—now the O'Brien Corp.—my random thoughts naturally turned to paints and their possible chemurgic aspects.

Glen McIlroy, Irwin, Ohio, past president of the American Soybean Association, dropped the bomb into a group of paint-wise chemurgists. He solicited the cooperation of the paint people to find ways of using soybeans in paints. Like the gentleman McIlroy is, his approach was subtle at first, then very direct, culminating in a forceful entreaty, backed up with a bit of "honey on a stick" about how the farmers would

go for a soybean paint. The lid was off. Paint chemurgists had gotten the scent of raw meat and the hounds were off and running without benefit of pari-mutuel betting.

A rash of soybeans erupted on the farm paint market and before an antitoxin could be found for the vicious virus of inexperience, the epidemic was among us. Some of the more presumptuous and unwise offerings of soy paints slipped all the way back to formulations prevalent in the early years of the century, merely substituting soy oil for linseed oil in the horse and buggy age formulas of 100 pounds of paste white lead reduced with 6 gallons of oil, plus a pint of Japan drier.

To some of the uninitiated it looked good, both on paper and in the can. Some folks liked it even on farm outbuildings until they found out it wouldn't dry in a month of Sundays and no amount of extra drier helped matters any.

Then the roof really fell in! The manager of one Midwest penal farm phoned to us about having five very dead white faced Hereford calves.

**Mr. Taggart's interest in soybean oil in paints has extended over at least a quarter century.**

Not being veterinarians we phoned the folks down at Purdue University and got the immediate reply that one good lick of lead-bearing paint was all it takes to kill a calf. Out went the lead. Thank goodness, O'Brien's had not furnished any of that type of paint. Our slowness was a blessing in many ways.

How terrible can a paint be? Take a look at this panel. Good old lead in oil dispersed, by simple mixing, in unrefined soybean oil. An informed paint chemist could not possibly have committed a greater sin. Lethal as it was to cattle, too many cattle were martyred instead of marketed.

Being the pioneers in unorthodox heat treatments given to drying oils, we at O'Brien's approached Brother McIlroy's plea from our experience with tung oil. That long story need not be rehearsed at this time; suffice to report that after dozens of discouraging failures, a superior soybean oil blend blossomed out from a mixture of 45 pounds of refined soybean oil thermolyzed in the presence of 55 pounds of American-grown tung oil. Notice I said "in the presence of" because separately thermolyzed soy oil and tung oil, subsequently mixed, does not do the trick.

### Thermolyzation Process

Many of you people are quite familiar with our now-famous thermolyzation process; the patent has expired and the world at large is at liberty to use it without infringement. For the benefit of any of you who are not familiar with the thermolyzation process, and for the record, let me state that it involves a quick heating up through the well-known critical temperatures of tung oil, up to 750° F., and just as quick a cooling down through those polymerization temperatures to stable storage temperatures. The whole round trip is faster than that of our latest supersonic jet planes; less than 30 seconds from here to there and back.



When production cost figures are considered, and when don't we, you can visualize the manufacturing savings dollars brought about by this revolutionary continuous process. Think of tying on to a couple of adjacent tank cars and coming up with 100,000 pounds of ready-to-go paint oil with not much more effort than that of pressing a few push buttons. In a nutshell, that constitutes our present modes operandi.

For use on farm area surfaces, from outbuildings to fences and gates, O'Brien's formulated a lead-free paint from this thermolyzed oil base of 45% soy oil and 55% tung oil content. Its great superiority and continuing success is today a most pleasing and mutually profitable item in production.

### Lead-Free Paint

This panel exhibits this lead-free "safe for stock licking" soybean chemurgic coating. Inspect it at your convenience. It has been submitted to excessive weathering out in the field where it had to take the killing rays of the sun and eroding rain, wind, as well as the popping freezing of Illinois winters. Like everything else, it too has a definite life span expectancy, thank goodness, or we would starve to death, but we are just as happy about its widespread acceptance as its users are satisfied with its performance. High soy content. No dead calves. Good decoration. Good protection.

For urban areas a more conventional pigmentation was formulated around the universally proven quartet of zinc oxide, titanium oxide, basic lead carbonate and silicates. The zinc contributing to film hardness, initial gloss and fungicidal properties. Titanium builds up opacity for obliteration of under surface blemishes, while controlling chalking, for clean appearance on aging. Lead minimizes browning of nail heads; the especially selected silicates act like reinforcing steel rods do in poured concrete, to afford great tensile strength.

Maybe you would like to view this regular line soybean chemurgic coating after it, too, has been through the wear-out mill. This panel illustrates the point. Notice the general overall film integrity. Good color, even film thickness due to uniform distribution, coupled with just the right degree of film mobility after the last stroke of the brush; perfect chalking rate for continuous fine appearance for its normal life which leaves an ideal surface structure for adhesion of the subsequent coat

applied years later. This product is the one we write home about. Would you like to see it in action?

All of the foregoing commentary on soybean chemurgic coating includes frightful, disastrous failures due to ignorance in the very early days, to joyful success as exhibited by these later examples.

This paper would be definitely incomplete if I failed to mention corollary pursuits. Research on more complicated types of protective coatings has been prosecuted also. I speak now about the incorporation of soybean oil into industrial outlet coatings, running the gamut between finishes for household appliances, to automobiles and farm equipment, as well as toys, metal gadgets and lawn mowers.

All of these finishes are considered quite correctly as enamels. The distinctive difference between a paint and an enamel is in the vehicle liquid phase solids; an enamel vehicle contains a definite amount of resin-like substances to afford high gloss, hardness, quick film set and dry, and to impart abrasion resistance.

The resin constituent may be any carefully selected one from esterified

rosin, phenolformaldehyde condensates or one or more of the synthetics such as modified alkyds obtained by processing polybasic acids, oxidized naphthylene or mothballs to you, with polyhydric alcohols, such as glycerin, from animal oils.

Glycerin is now being synthesized.

To give decorative color to enamels, we use the same wide variety of pigments as we do in paints.

Soybean oil, properly reacted with other materials, is presently being used to prepare a special long oil alkyd to produce a most rigidly formulated high-gloss, yet durable vehicle for bright color air-drying trim paints.

Further, soybean oil is occasionally processed to permit incorporation into some lacquers of the nitrocellulose type.

Soybean oil, whenever and wherever used in protective coatings, imparts certain properties of flexibility and color retention and, due to its inherent slowness to dry, it also is much slower to oxidize on exposure to the devitalizing ultraviolet rays of the sun, thereby improving matters all around.

The possibilities of soybean chemurgic coatings are still very great!

## Attache Employees Visit U. S. Farms



—Photo by Wallace N. Dudley in USDA's Foreign Agriculture.

SIX OUTSTANDING local employees from U. S. agricultural attache offices abroad were chosen to spend 4 weeks in the United States last fall in the first Foreign Agricultural Service training school for foreign professionals.

What they learned about the production and processing of U. S. farm commodities will help them to do an even more useful job of providing

information both to and about U. S. agriculture.

Above, the group watches combine harvesting in a Maryland soybean field. Left to right: Ludvig Madsen, Copenhagen; Rolando Guzman, Santiago; Cornelis de Goede, Canberra; Hameed Farooqui, Karachi; farm owner Henry J. Osterman; Roberto Solis, Mexico City; and Des Raj Gulati, New Delhi.



OHIO AGRONOMISTS H. J. Mederski and D. J. Hoff inspect plants being used in manganese deficiency studies.

*Tenth of a series*

# Soybean Research in Ohio

By GLENN F. SCHOTTEN

Assistant Editor, Ohio Agricultural  
Experiment Station

SOYBEANS have become a part of the firm backbone of modern hog feeding as a result of pioneering research at the Ohio Agricultural Experiment Station. It was here that the late W. L. Robison, exploring the possibilities of utilizing the soybean in hog rations, fitted together the pieces of the soybean puzzle from which the modern picture of swine nutrition has evolved.

Since those early beginnings in the late 1930's, the Ohio Station has enlarged its soybean research program to include not only animal nutrition research, but also cultural, breeding, marketing and pathological studies.

Major emphasis is put, for instance, on breeding new varieties especially with the development of disease-resistant varieties in mind. Variety and strain performance trials are maintained in five widely scattered counties to test them under different conditions.

Since Phytophthora root rot is a major problem in Ohio, Dr. P. E. Smith of the department of agronomy has his sights set on breeding a variety that hurdles this obstacle in the way of peak production. He reports that several promising strains have been developed which will be released for commercial production in the near future.

Part of the breeding program is devoted to certain genetic studies. The research involving the study of root rot shows that the inheritance of this disease is controlled by a single gene pair with resistance dominant and influenced by several modifying factors.

Dr. Smith is also investigating the possibilities of the use of induced mutations by X-ray irradiation in a soybean breeding program. So far he has determined that X-ray irradiation may cause significant changes in such characters as seed yield, percent oil in the seed, percent protein in the seed, date of maturity, date of flowering, plant height and size of seed.

## Cost of Producing Beans

Agricultural economists are in the midst of a study to learn many economic factors connected with growing soybeans. Dr. R. H. Blosser is doing research to learn the hours of man labor needed and the total cost of labor; hours of tractor power needed and cost of power; hours the various pieces of machinery are used and the total cost of using this machinery; cost of mineral nutrients removed; cost of lime used by the bean crop; amount of seed used and cost per acre; and cost of using the land.

He is making the study from an acre of soybean land on some of Ohio's best crop land. These calculations are being made for different size equipment to show how size of machinery affects the total cost of producing an acre of soybeans.

Besides this data, calculations will also be made to show the cost of producing a bushel of soybeans and the profit per acre after paying for all items needed to produce this crop.

## Chemical Weed Killers

A mixture of CIPC plus Alanap-3, each at 2 pounds (active ingredient)

per acre, has been the most consistently satisfactory pre-emergence herbicide for controlling both annual broadleaf and annual grass weeds in soybeans in Ohio. This mixture often has given better weed control than either component applied alone at the standard pre-emergence rates, and does not cost as much.

Results with CDAA have been erratic in tests by Dr. D. D. Bondarenko.

DNBP is the only herbicide that appears promising as a post-emergence treatment for soybeans in Ohio. DNBP kills both annual grass and broadleaf weeds. Rather severe leaf burn of soybeans follows what appears to be even the best treatment—2¼ to 3 pounds (active ingredient) of DNBP per acre when the soybeans are at the bileaf (2-true-leaf) stage and the weeds are up. But recovery after this treatment is rapid and neither the maturity nor the yield of the soybeans is affected by the burning.

## Soybean Disease Studies

Most of the soybean disease work has emphasized Phytophthora root rot. This disease has been increasingly widespread in Ohio and is considered the biggest hazard to production in the chief soybean-producing area.

It has been found that yields of susceptible varieties such as Harosoy may be decreased as much as 50% even though the stand is not badly depleted. As yet only two early varieties, Monroe and Blackhawk, are resistant to this disease.

The etiology of Phytophthora root

rot is being intensively studied. There is some indication that the pathogen can be seedborne. The effects of crop rotation and other cultural practices on the severity of the disease are also being investigated. Studies to determine the presence of pathogenic variability in the pathogen have been initiated.

#### **Manganese Deficiency**

Soybeans are very susceptible to manganese deficiency and many of the soils in northwestern Ohio do not contain enough manganese in the available form for maximum soybean production. Research at the Ohio Station indicates the deficiency can be satisfactorily corrected by spraying the plants with 5 to 10 pounds of manganese sulfate per acre applied in a solution volume of 5 to 25 gallons.

The correction by row application at planting time of manganese or a manganese fertilizer mixture may be desirable where a manganese deficiency is known to exist. Under Ohio conditions, 30 pounds per acre of manganese sulfate in the row at planting have been found adequate.

#### **Soil Test for Manganese**

Dr. D. J. Hoff, agronomist at the Ohio Agricultural Experiment Station, has developed a method of estimating available manganese. This system, because of its reliability and simplicity, may soon be added to the soil testing service at Ohio State University.

The method is called phosphate extraction. A 10-gram sample of soil is shaken in with 100 milliliters of phosphoric acid or ammonium dihydrogen phosphate. Analyzing the filtered liquid gives a measure of the amount of manganese that is available to the soybean plants.

#### **High Fertility Needed**

The Ohio Station's findings show that the best way to fertilize soybeans is to increase the rates of fertilizer applied to the responsive crops in the rotation. It is useless to fertilize soybeans on acid soils; it is much more profitable to spend this money for limestone. Soybeans do best on fertile soils which are the result of a longtime soil improvement program involving adequate green manure crops or heavily fertilized and limed meadows, and other practices which maintain or increase soil productivity levels.

Well-inoculated soybeans do not respond to nitrogen and fix some nitrogen. Therefore, in a rotation

including corn they belong after corn, not after sod, for greatest economy.

#### **Effect of Gibberellic Acid**

The growth promoting hormone, gibberellic acid, was tried on soybeans both in the greenhouse and in the field. Dr. D. J. Hoff of the department of agronomy found that the acid gave visual response in the greenhouse soybeans at spray concentrations of 50 ppm but there was no response in the field. This work is limited and incomplete.

#### **Row Width and Yield**

Soybean growers might help themselves to better yields by paying stricter attention to two simple but important matters: date of planting and spacing of rows. Midwest farmers have known many years they can get superior yields from narrow rows. However, the variety picture has changed and experiments were set up at two Ohio locations to test the effect of row width and date of planting on yields of popular, newer varieties.

Varieties were either drilled solid or in rows spaced 28 or 42 inches apart. In most cases the solid drilled beans yielded best. The highest average yield in a 3-year period was 34.9 bushels per acre using the variety Harosoy. But lodging and weed control are among the problems in solid plantings.

Conclusion: The Ohio farmer is best to stick with narrower rows, from 21 to 32 inches, rather than the 42-inch rows.

#### **Soybeans on the Dairy Farm**

Dairymen have frequently asked the question: Should I feed my soybeans or sell them and buy the meal? Work at the Ohio Experiment Station shows that the beans and meal are of about equal feeding value under practical feeding conditions. The extra fat contributed by the beans did not lead to increased production even under conditions of liberal roughage and restricted grain feeding.

However, raw soybeans may be used satisfactorily in the dairy grain mixture as a protein supplement for extended periods, without suppressing carotene and vitamin A content of the milk, if the amounts used are moderate and roughages are fed liberally.

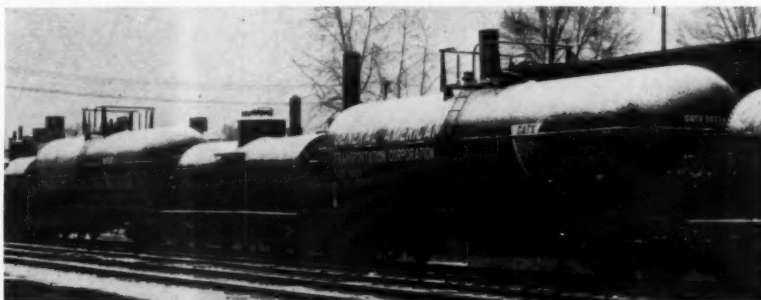
The market value of the beans as compared to the meal and other protein supplements will decide the issue, according to dairy scientists.

#### **Favors Moderate Protein Level in Laying Ration**

A MAJOR lesson to be learned should be the importance of keeping protein levels in practical laying rations moderate, according to Hans Fisher of Rutgers University.

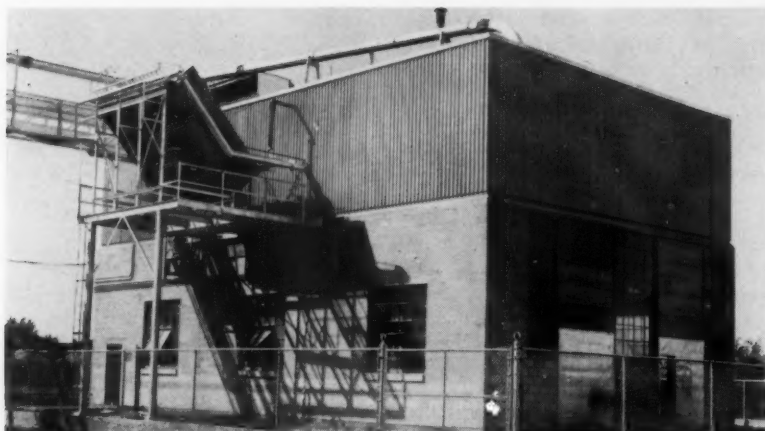
"Neither should they be reduced drastically without great consideration as to the essential amino acid composition, nor should they be increased unduly in the hope that a little more of a good thing is even better."

#### **"King Size" Tankcars Loaded with Soybean Oil**



CENTRAL SOYA CO., Fort Wayne, Ind., recently loaded its first "King Size" tankcars with soybean oil. Shown at the company's Decatur, Ind., plant are the two cars—each loaded with 20,000 gallons of soybean oil. The two cars provide a vivid contrast with an 8,000-gallon car which they bracket. The big cars belong to General American Transportation Corp. and are being used on an experimental basis. Railroads report that substantial savings in freight can be realized by the use of "King Size" tankcars for the transport of food, chemical and petroleum products.





**EXTRACTION BUILDING of Co-op Vegetable Oils, Altona, Manitoba, showing air-cooled condensers. Note how the flakes and steam are piped into the building as well as the meal and condensate return.**

## Solvent Plant Without Water

DID YOU ever hear of an oilseed processing plant that uses no condenser water? Yes, that's what we said, "No water!"

In the northern reaches of the Red River Valley of the North, in Altona, Manitoba, Canada, there is a solvent processing plant operating on soybeans, rapeseed and sunflower seeds, and the entire process functions without condenser water.

The Co-op Vegetable Oils Ltd. had been operating three screw presses for several years in its plant at Altona. When the firm decided to switch over to solvent extraction, the engineers were confronted with an unusual situation due to the fact that no water is available at the plant.

All water, whether drinking water, boiler water, or plain washing water, has to be hauled in by tanktruck. The 80-ton solvent plant contemplated uses about 130 gallons of water a minute!

However, never having heard the phrase, "It can't be done," the engineers of Crown Iron Works Co., Minneapolis, Minn., under the able direction of Al Kaiser, departed from the usual procedure and designed a unique method of air cooling.

As far as the Crown people know, this is the first time an oilseed solvent processing plant has successfully used air condensing instead of water. According to John Enns, Co-op Vegetable Oils manager, air cooling is doing a good job and is meeting the firm's expectations.

Also, the maintenance cost of this type of condenser is practically nonexistent.

The extraction building is a combination of concrete block and metal, with the upper third of the walls comprised of Robertson Galbestos. This allows for a minimum number of windows because of strong prevailing winds.

Co-op Vegetable Oils has prompted sunflower growing among its member farmers. Rapeseed also is grown, as it is a natural crop for the short growing season.

Most soybeans processed are trucked in from the States.

### Embree Heads Oil Chemists' Society

N. D. EMBREE, Distillation Products Industries, Rochester, N. Y., was elected president of the American Oil Chemists' Society for 1959-60 at the 50th anniversary meeting in New Orleans Apr. 20.

Other officers: R. W. Bates, Armour & Co., Chicago, vice president; R. C. Stillman, Procter & Gamble Co., Cincinnati, secretary; and A. F. Kapecki, Wurster & Sanger, Inc., Chicago.

Members at large will be A. R. Baldwin, Cargill, Inc., Minneapolis; J. C. Harris, Monsanto Chemical Co., Dayton, Ohio; and K. F. Mattil, Swift & Co., Chicago.

Serving with the seven officers will be the four most recent past presidents: J. C. Konen, Archer-Dan-

iels-Midland Co., Minneapolis; H. C. Black, Swift & Co., Chicago; T. H. Hopper, Southern Regional Research Laboratory, New Orleans; and W. A. Peterson, Colgate-Palmolive Co., New York.

With 35 chemists participating in the soybean series of the Smalley check samples there was a three-way tie for first place, all having 100% grade: T. C. Law, Law & Co., Atlanta, Ga.; P. L. Phillips, Barrow-Agee Laboratories, Jackson Miss.; and Ben C. White, Barrow-Agee Laboratories, Shreveport, La. Honorable mention was given to Carl Moss, Swift & Co., Champaign, Ill.; and to W. G. Wadlington, Woodson-Tenent Laboratories, Chicago.

With 85 collaborators in the vegetable oil series, first place went to F. M. Tindall, HumKo Co., Memphis, Tenn., with 99.4%; second to Duane Tilson, Texas Testing Laboratory, Lubbock, Tex., with 98.8%; and honorable mention to J. G. Bowling, Woodson-Tenent Laboratories, Des Moines, Iowa, with 98.3%.

One hundred and thirty-nine chemists participated in the meal series, a record-breaking number.

First place for moisture went to G. G. Dickinson, Texas Testing Laboratories, El Paso, Tex., with 100%; with M. E. Fogle, Buckeye Cellulose Corp., Augusta, Ga., and H. L. Hut-ton, Woodson-Tenent Laboratories, Clarksdale, Miss., tied for second, with 99.8%.

On the determination of oil first place went to E. R. Hahn, Hahn Laboratories, Columbia, S. C., with 99.8%; D. B. McIsaac, Kershaw Oil Mill, Kershaw, S. C., second with 99.6%; and R. L. Pope, Pope Testing Laboratory, Dallas, Tex., honorable mention.

First place on the determination of nitrogen was won by T. L. Rettger, retired, and W. J. Johnson, Buckeye Cellulose Corp., Memphis, Tenn., with grades of 99.6%. Second place went to Mr. McIsaac with 99.4%.

The Smalley cup, the highest honor, was presented by Armour & Co. to Mr. Hahn and Mr. McIsaac who were tied at 99.44% for the combined proficiency on the determination of moisture, oil and nitrogen on meal. Honorable mention was given to Mr. Pope with 99.32%.

A total of 15,700 pounds of soybean seed was imported into the United States between July 1, 1958, and Mar. 31, 1959, according to Agricultural Marketing Service, USDA. All came from Canada.



## Ohio Producers

# Watch Planting Date and Row Width

By P. E. SMITH

Department of Agronomy,  
Ohio Agricultural Experiment Station.  
Reprinted from Ohio Farm & Home Research.

OHIO SOYBEAN growers might help themselves to better yields by paying closer attention to two simple, but important, matters: date of planting and spacing of rows.

Midwest farmers have known many years that they can get superior soybean yields from narrow rows. However, the variety picture has changed and experiments were set up at Columbus and at Castalia by the Agricultural Experiment Station to test the effect of row width and date of planting on yields of popular, newer varieties.

All varieties were either drilled solid or in rows spaced 28 or 42 inches apart. In most cases the solid drilled beans yielded best. The highest average yield in a 3-year period was at Castalia, where 34.9 bushels per acre were harvested using the variety Harosoy.

Planting soybeans solid, however, is not wise for many reasons, even though yield may be better. In the first place weeds cannot be con-

trolled since the number of times a person can get in with a rotary hoe is limited. Weeds increase the time needed to harvest and often mean expensive repair to the combine. Weed seeds mean an additional cleaning operation before beans can be stored or marketed without a price cut.

Lodging is worse in solid plantings, too. It takes one and one-half or two times the amount of seed to plant an acre so a farmer might lose the advantage of better yield anyway. And last, it is more difficult to get adequate stands when soybeans are drilled solid.

In Columbus the dates of sowing for the 4-year test period were May 15 for the first planting and June 5 for the second. These trials showed that in the Franklin County area, if early planting is desired, there is no disadvantage in using wider rows. On the other hand, if a farmer waits until June, he would be wiser to plant at the narrower spacing.

At Castalia the average planting date for the first planting was May 21 and the second planting, June 15. In this northwest section of Ohio,

the narrow width planting yielded better in both early and late plantings.

In summary the tests show that if you live in the Columbus area and plant early, 36- to 42-inch row spacings should give high yields. This will allow ample opportunity to control weeds. However, if you must delay your planting, row widths of from 21 to 32 inches are better, provided they can be cultivated to control weeds.

Regardless of whether the northwest Ohio farmer plants early or late, his best bet is to stick with narrower rows. He should harvest more soybeans that way.

## Yugoslavia Buys Beans From Communist China

YUGOSLAVIA has contracted for 21,000 metric tons (771,600 bushels) of soybeans from Communist China for delivery during April-June of this year. Imports of soybeans in 1958 are estimated at around 10,000 tons (370,000 bushels), mostly from Red China.

TABLE 1.—AVERAGE SOYBEAN YIELDS IN BUSHELS PER ACRE WHEN PLANTED IN THREE ROW WIDTHS AND TWO DATES OF PLANTING, COLUMBUS, OHIO, 1954-57

Variety	Planting method	First planting date		Second planting date
		1956-57	1955-57	1954-57
Monroe	Drilled solid	25.4	25.0	28.5
	28 in. row	23.6	25.0	26.0
	42 in. row	20.4	21.5	20.6
Harosoy	Drilled solid	25.4	29.2	33.3
	28 in. row	25.8	29.2	30.0
	42 in. row	21.0	23.9	25.4
Hawkeye	Drilled solid	20.6	26.9	30.7
	28 in. row	22.3	26.9	29.2
	42 in. row	22.2	24.7	24.2
Lincoln	Drilled solid	16.7	25.1	28.3
	28 in. row	21.1	25.1	26.7
	42 in. row	19.4	23.8	22.3

TABLE 2.—AVERAGE SOYBEAN YIELDS IN BUSHELS PER ACRE WHEN PLANTED IN THREE ROW WIDTHS AND TWO DATES OF PLANTING, CASTALIA, OHIO, 1955-57

Variety	Planting method	First planting date	Second planting date
		1955-57	1955-57
Monroe	Drilled solid	34.5	29.8
	28 in. row	29.9	24.8
	42 in. row	24.4	20.4
Harosoy	Drilled solid	34.9	31.7
	28 in. row	30.2	27.1
	42 in. row	27.0	23.0

MAY, 1959

### ANNOUNCING



### ALL NEW

### ROSS HEAVY DUTY SOYBEAN MILL

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**HEAVY DUTY SOYBEAN & CRACKING MILL IN 10x36 - 10x42 TWO & THREE PAIR HIGH & SPECIAL SIZES**

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All Ross units are furnished with highest grade deep chill, Turn-Tuff chilled iron rolls by Turner, Worlds largest roll makers. Tough hard biting corrugations for years of service.

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OKLA. CITY, OKLA.

# Develop New Process for Outer Coat of Soybean

WHILE SOYBEAN products are finding broadening markets in the industrial field, their most startling contribution to human welfare has been recorded in the field of food production. W. E. Huge, vice president, Central Soya Co., Inc., Fort Wayne, Ind., told the Chemurgic Conference recently at Chicago.

"One of the interesting industrial fields involves automobile fuel. Carburetor icing has long demanded the attention of airplane pilots. As more complex automobile engines endeavor to wring more power from fuel, similar problems have arisen. A recently patented product termed S41K produced essentially from soybean lecithin appears to have provided an answer to this problem in the form of a gasoline additive.

"High-protein soybean meal has served to substantially broaden the market for soybean products while contributing further to the effectiveness of specialized, high-energy rations," said Mr. Huge.

"This development, however, presented a new problem—finding a use and market for the fibrous outer-coating, or bran, of the soybean. Approximately 7% of the weight of the soybean is represented by the soybean bran.

"Much research is in progress, but an important break-through was recently accomplished. After nearly 3 years of research and experiments, a processing method has been developed producing a product of considerable promise in ruminant feeding. The process alters the cellular structure making possible liquid absorption exceeding five times its own weight.

"A recent release by the Ohio Agricultural Experiment Station reports the cellulose digestibility of this product exceeds 95%, nearly double that of ground corn cobs, or ground alfalfa hay.

"I often wonder how history will record the administration of our food abundance.

"Will history record that for a brief period a people representing 7% of the world's population was able to provide for itself a supply of food so bountiful that they gave serious consideration to methods of limiting food production? And while, at the same time, hundreds of millions of humans in various parts

of the world lacked sufficient food to maintain minimum nutritional requirements.

"We have made some limited constructive use of our food abundance . . . through the medium of P. L. 480 and charitable relief organizations. In some encouraging instances, such market development has already been followed by new commercial markets. Poultry meat to west Germany is an example of this progress.

"Sometimes we hear these routes classed as only a temporary vehicle by which we might get rid of our so-called surplus. I maintain that this attitude is both practically and morally incorrect. We have the privilege of enjoying the most abundant food supply in world history. Is it not, therefore, our responsibility to find distribution methods whereby this abundance might be used in the world constructively?"

## New High Oil Corn Available Next Year

SIXTY YEARS of research will make it possible for Illinois farmers to plant new corn hybrids with 30% more oil and 10% more protein in 1960.

Speaking before a Farm and Home Festival audience at Urbana, R. W. Jugenheimer, University of Illinois corn breeder, reported that the new hybrids compare favorably with standard hybrids in yields, standability and other traits. But the extra oil and protein in the grain will make them more valuable for feed and industrial uses.

Jugenheimer reported that in feeding tests with lambs the special high-oil corn produced faster gains on 6% to 7% less feed. These new hybrids also contain higher quality germ protein than common hybrids. Larger amounts of this nutritionally balanced protein may mean that less protein supplement will be needed to balance future livestock rations.

Corn oil can be used in bakery products, cooking oil, margarine, mayonnaise, salad dressing, pharmaceuticals, chemicals, paint, varnish, rubber substitutes, rust preventives, soap, soluble oil and textiles.

One of the proteins of corn, zein, has been used to produce "Vicara," a fiber used in blends with wool.

## U. S. Will Be Host to Seed Crushers in France

CONGRESS of the International Association of Seed Crushers at Cannes, France, June 2-5 is being sponsored this year by the oils and fats industries of the United States.

The Congress will be opened by the U. S. ambassador to France, and the U. S. group will sponsor a reception and banquet and ball.

A number of U. S. speakers including Senator H. H. Humphrey are slated to be on the program.

Speakers and their subjects will include:

J. C. A. Faure, Great Britain, "Statement on the U. S. Soybean Contract," and "The World Oils and Fats Position."

W. E. Huge, Central Soya Co., Fort Wayne, Ind., "The U. S. Oils and Fats Market."

Martin Sorkin, U. S. Department of Agriculture, "U. S. Agricultural Policy and the Oils and Fats Industries."

Eldred A. Cayce, Ralston Purina Co., St. Louis, "The U. S. Protein Supply Situation."

J. C. Konen, Archer-Daniels-Midland Co., Minneapolis, Minn., "Private and Government Research in U. S. Fats and Oils."

R. L. Raclin, Bache & Co., Chicago, "Futures Markets."

The entertainment committee for the Congress:

T. L. Daniels, Archer-Daniels-Midland Co., Minneapolis, chairman; Geo. L. Prichard, National Soybean Processors Association, Washington, D. C.

Dwayne O. Andreas, Honeymead Products Co., Mankato, Minn.; Howard D. Boone, Cargill, Inc., San Francisco; D. J. Bunnell, Lever Bros. Co., New York; James J. Coleman, American Liberty Marketing Co., New Orleans; Carlos Cui, Pacific Vegetable Oil Corp., San Francisco; R. S. Hebert, Sr., J. H. Redding, Inc., New York; Harry H. Kriegel, Proseco International S. A., Nassua N. P., Bahamas; Nelson Morris II, Darling & Co., Chicago; Leo Pasternak, L. Pasternak Co., New York; A. Q. Petersen, Southern Cotton Oil Co., New Orleans; Robert L. Raclin, Bache & Co., Chicago; Geo. M. Strayer, American Soybean Association, Hudson, Iowa; R. B. Williams, Buckeye Cellulose Corp., Cincinnati; and Donald B. Walker, Ralston Purina Co., St. Louis.

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## Pre-Tested Nodogen "Makes" 2 Extra Bushels of Soybeans Per Acre for Less than 15 Cents

Big returns in extra yield and profits . . . for such a small investment! That's because Nodogen's Mr. Fixo inoculator contains billions more active, effective nitrogen-fixing bacteria. Nodogen's consistent high quality — which can be verified by any state or federal agency that tests inoculants — is your insurance of better legume crops, higher yields, extra profits. Nodogen is so easy to use, wet or dry, and costs just a few cents per acre.

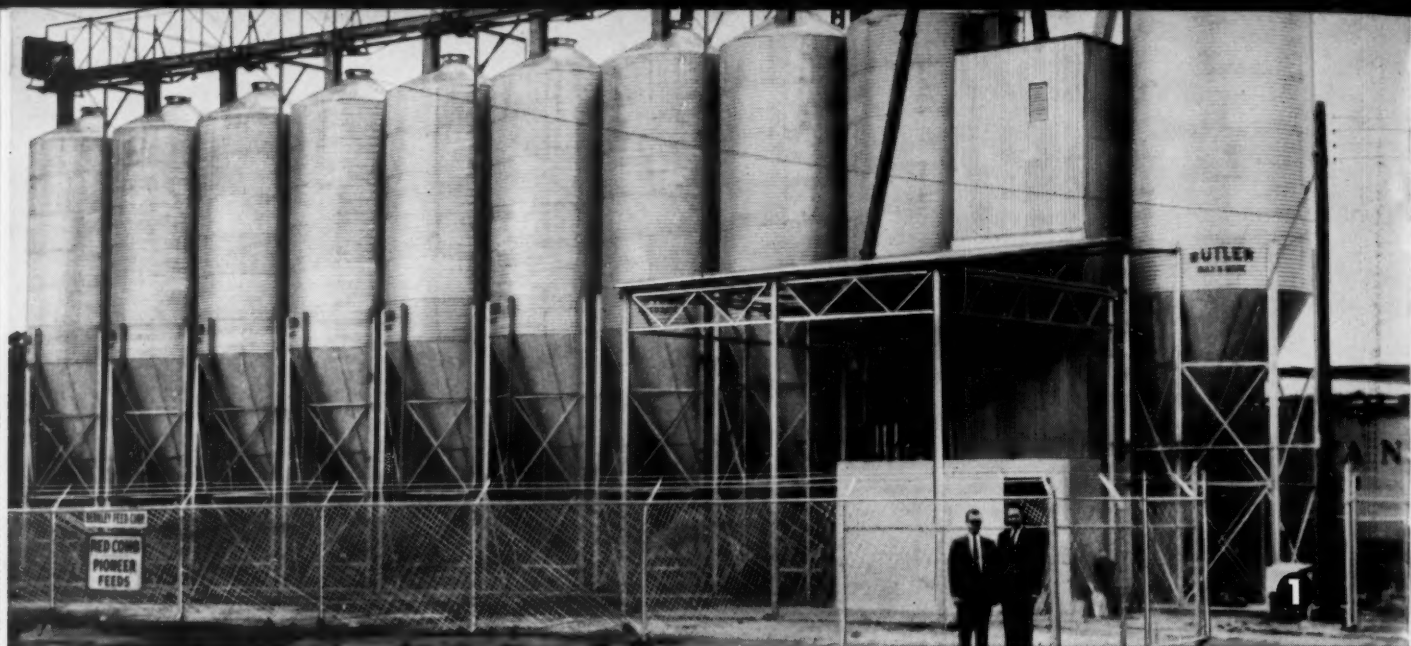


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**1. For profitable bulk feed handling** Red Comb Pioneer Feeds, Berkeley, Virginia installed this 280 ton Butler Bulk-O-Matic system. You, too, can boost sales . . . reduce operating expenses . . . increase your feed profits with push-button controlled Butler Bulk-O-Matic handling systems.

**2. Need volume storage at low cost per bushel?** This is part of a 5 million bushel Butler storage installation at Hastings, Nebraska. Each of the four Butler flat storage buildings in the foreground is 70 feet wide, 500 feet long and holds 650,000 bushels of grain.

**3. For fast grain handling in any weather** you can't beat this Butler grain storage installation in Oklahoma. Covered drive-through, made with Butler components, protects dump pit from weather. Vertical leg and roof auger on Butler building permits push-button loading.

**4. Need fire-safe vertical storage?** The Rosedale Grain Company of Rosedale, Indiana chose Butler round bolted steel tanks to hold down insurance rates . . . construction costs and maintenance expenses. Weathertight, rodent and insect-proof Butler tanks available in capacities from 1,297 to 123,364 bushels.

**5. Planning a feed processing plant?** Tindle Milling Company, Springfield, Missouri used Butler square bolted steel tanks to create this modern high-speed, batch-feed mixing plant. Hopper scales, mixers and the pneumatic handling system are push-button controlled for fast handling.



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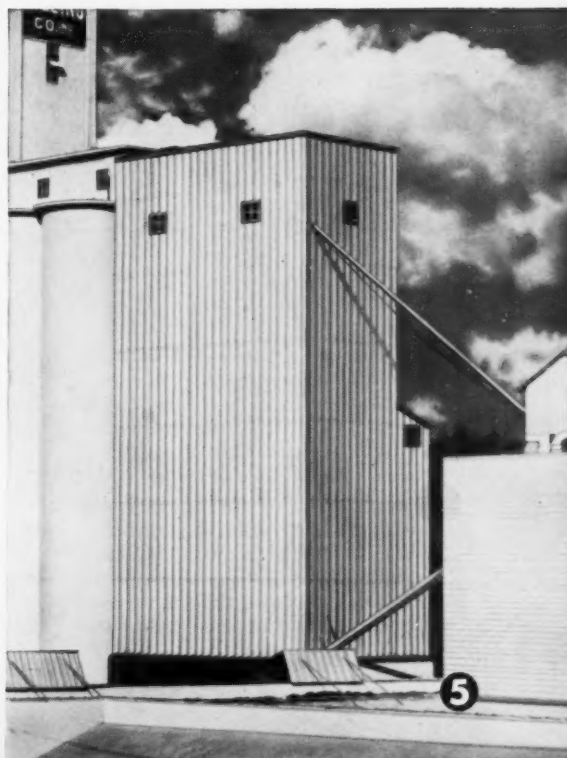
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# Time of Planting Important

PLANTING OF soybeans within specified dates is extremely important for successful production, the U. S. Department of Agriculture reminds growers.

The best times to plant in the Northern States are May 15 to June 1, in the Central States May 10 to June 5, and in the Southern States May 1 to June 10. In extreme southern areas, the recommended planting dates are June 1 to June 30.

These most favorable times for planting soybeans have been determined through experiments by scientists of USDA's Agricultural Research Service and state agricultural experiment stations. If planting is delayed beyond recommended dates, the scientists said, early-maturing varieties should be used in northern areas, medium-maturing varieties in central areas, and full-season varieties in southern areas.

The maturity date of soybeans, yield, seed quality, and oil content of the seed are affected by time of flowering, which occurs only when days are of a certain minimum length. Different soybean varieties, all known as short-day plants, are adapted for growth in narrow belts of latitude. These belts are determined by location in the country and time of season. Flowering takes place in these belts, south to north, as daylight diminishes during the summer season to the necessary length.

USDA scientists said that generally in any area the maturity date of an early-maturing variety is more affected by date of planting than is the maturity date of a late-maturing variety. Fairly early plantings of early-maturing varieties and early plantings of late-maturing varieties usually result in highest yields. Best quality seed is normally produced by most early and late-maturing varieties if planted at times that also aid in the production of highest yields.

Oil content of the seed is little affected by date of planting of early-maturing varieties, but oil content of the seed of late-maturing varieties steadily decreases as planting is delayed.

Rapid soybean emergence and growth are encouraged if planting is done after the soil temperature is 65° or warmer. Allowing the soil to warm also provides time for weeds to germinate and be killed before the

soybeans are planted. Too early plantings emerge and grow slowly, permitting weeds to get established before the soybeans.

Emergence of soybeans usually takes 12 to 14 days when the soil temperature is less than 65°. The plants emerge in 5 to 7 days if the soil temperature is above 65°. Of course, quicker emergence and faster growth mean less time to maturity and harvest.

## Europe Aims at Modern Mixed Feed Industry

THE DEVELOPMENT of a mixed feed industry along modern and efficient lines similar to the U. S. mixed feed industry has become the preoccupation of many in Europe, Alvin R. Blattner, Corn Products Co., New York, told the annual Chemurgic Conference at Chicago recently.

"It is simply a matter of survival," said Blattner. "The amounts of protein required to maintain a human population some 50% larger than our own are enormous, and the problems of producing this protein of animal origin within restricted land area are nothing short of staggering.

"A long-range educational program is needed to urge poultrymen to take full advantage of modern technology and nutritional advances.

"In some parts of Europe today there is only the barest awareness of these all-important factors.

"It can be estimated that the combined feed tonnage output of western European countries ranges between 15 and 20 million tons. This is at best one-half of the total feed manufactured in the United States last year, and we have seen that the human population involved is about 50% greater.

"It is evident that Europe presents a greater potential for feed manufacturing for many years to come.

"As the (European) standards of living are rising, as travel and communications create a demand for new products, the nations are becoming more industrialized and the trend is away from the farm and toward the factory. The pattern is similar to our own.

"The proportion of agricultural to industrial workers is forever shrinking, just as is the ratio of arable land to the total population. The logical

answer is greater farm efficiency at all levels, and particularly in the field of feeding animals for better production."

## Big Soybean Crop Expansion in S. C.

SOYBEANS ARE becoming one of South Carolina's most important crops, a meeting sponsored by the Clemson College extension department at Charleston, S. C., Apr. 3 was told.

Dr. Harold L. Munsen, associate agronomist at the Edisto Experiment Station, Blackville, said he has been experimenting with soybean production for the last 2 years and that soybeans show a promise for the entire Southeast.

J. T. McAlister, conservation equipment engineer with the U. S. Soil Conservation Service, Orangeburg, said soybean production has risen from a mere 2,000 acres in South Carolina a few years ago to more than 389,000 acres in 1958.

This, he said, is three times as much as was produced in Georgia. He estimated that the South Carolina acreage would reach 420,000 this year.

Dr. J. Carroll Barnes, director of the Clemson Experiment Station, Dupont, described soybeans as a "bonus crop" since they can be planted after spring crops have been harvested and gathered before fall crops are planted.

Styles Harper and Grover Bowers, owners of one of the state's largest grain, seed and fertilizer businesses, Harper & Bowers, Estill, were hosts at a dinner preceding the meeting.

## New Processing Plant At Van Buren, Ark.

THE COOPERATIVE Processing Association has been formed at Van Buren, Ark., to operate a soybean processing plant to be completed by Sept. 1, in time for the 1959 crop. The plant is expected to furnish a market for 2 million bushels of soybeans yearly.

Ray Robus, Pella, Iowa, has been named manager of the local plant, and Benny Franks, formerly with the Fort Smith Cotton Oil Mill, superintendent.

Members of the board of directors are Bruce McCulley, chairman; Homer Young, secretary; and Jack White, Gene Deason and Harold Moore.



**Eight minute "flip" speeds his grain to Europe.** At Port Cargill, Minnesota, a giant boxcar is flipped on end, and 2,000 bushels of this farmer's grain are unloaded in just eight minutes. Over the rivers, lakes and seas of the world Cargill employs fleets of barges and ocean-going vessels to hurry the grain to distant ports. Through a complex network of transportation and storage, Cargill extends the arm of the American farmer to feed hungry mouths in hundreds of markets from Italy to India. And like the tides of the ocean, the benefits come flowing back and deposit themselves where they started . . . on the American farm. It's another example of how Cargill extends the reach of this important businessman — the American farmer.



**CARGILL** *EXTENDING THE REACH OF  
THE AMERICAN FARMER*



U. S. SOYBEAN MEAL display attracts the attention of Sardinian women at Cagliari. At left are Dr. J. R. Smyth and Dominic Marcello.



R. G. Houghtlin

## R. G. Houghtlin in Charge at Lausanne

R. G. HOUGHTLIN, secretary of the Soybean Council of America, Inc., will be in charge of the Council's exhibits of soybean products at the Fine Foods Fair which opens at Lausanne, Switzerland, in June.

The exhibit will demonstrate the use of soybean oil and other soy products in human food. Other U. S. groups sponsoring exhibits at the Lausanne fair are dairy, wheat and rice people.

Mr. Houghtlin, who will leave the United States May 23, will also attend the Congress of the International Association of Seed Crushers at Cannes, France, while abroad.

Houghtlin is president of the National Soybean Processors Association.

## Council Exhibits at Cagliari Fair

By DOMINIC J. MARCELLO

Director for Italy, Soybean Council of America

THE SOYBEAN COUNCIL of America and grain and poultry groups cooperated with the U. S. Department of Agriculture in exhibits in the 11th Samples Fair at Cagliari, Sardinia, Italy, recently.

U. S. farm products created considerable interest among thousands of Sardinian farmers, trade people and consumers visiting the Fair. Poultry and soybean exhibits were the major attractions of the U. S. market promotion pavilion.

Emphasis was on the high quality, availability and the use of U. S. feedstuffs in balanced rations. Thousands of inquiries were answered by U. S. feed specialists, who assisted at the exhibit. J. R. Smyth, University of Maine, represented the Soybean Council of America.

Another highlight of the promotion activities was a 2-day poultry and livestock feeding conference sponsored in cooperation with the fair management and officials of the Sardinian government. Farmers, farm leaders, mixed feed producers and trade people from a wide area heard U. S. specialists discuss with Sardinian agricultural leaders the role of U. S. soybean meal and feed grains in nutrition and the future of Sardinian livestock and poultry production.

Sardinia, an island 125 miles from the Italian mainland, is about the size of Maryland. Considerable progress has been made in its agriculture

in the last 10 years. As the island continues to improve and increase its livestock and poultry production, markets for U. S. soybean meal and other feedstuffs will expand accordingly.

The Cagliari Fair was the fifth showing of the soybean market promotion exhibit in Italy. An estimated 1 million people have seen the exhibit in the last 2 years.

The Council will also participate in fairs at Bologna, Trieste, Rovereto, Cremona and Foggia during the next few months.

## Soybean Council Display at Calcutta



SOY PRODUCTS display of the Soybean Council of America, Inc., at Calcutta, India. At left you see Miss Padmja Naidu, Governor of the West Bengal State. Second from right is Fred Hafner, General Mills, Inc., Minneapolis, in charge of the display. Others are Indian demonstrators. The display was part of the U. S. Solo Exhibit at Calcutta Mar. 15-Apr. 15. Over 200,000 people saw the exhibit during the first 2 weeks and consumed over 30,000 doughnuts containing U. S. soy flour and fried in soybean oil. The most frequent question was, "How soon can we get soy protein in India?"

**SOYBEAN COUNCIL  
OF AMERICA, INC.**

## Reviews 3-Year Work of Institute

By SHIZUKA HAYASHI

Managing Director, Japanese American Soybean Institute, Nikkatsu International Bldg., No. 1, 1-Chome Yurakucho, Chiyoda-Ku, Tokyo, Japan.

THE MARKET development project under contract between the American Soybean Association and the Japanese American Soybean Institute will be continued through Dec. 31.

The 3-year-old contract has been extended and working plans have already been set up for the new period.

At this point let us review the work carried on by the Institute during the past 3 years.

The following table shows imports of soybeans into Japan during the past 3 years:

	Total	From U.S.A.	From China	From others
1956 .....	717,081	536,055	165,790	15,236
1957 .....	805,489	605,359	199,657	473
1958 .....	904,700	777,436	89,187	38,067
1959 .....	998,000			

(Quantities given are in M/T)

There has been a gradual increase in the volume of soybeans imported into Japan, although the potential consumption as the result of our promotional activities would be much larger- if imports were not under government control.

In response to the increase in consumption of various soybean products, the government has budgeted to import nearly 1 million tons during the 1959 fiscal year. The actual requests by the different soybean groups made a larger total than the government allocation but were slashed.

The full effect of the market development activities will be felt when the government control is lifted. The ministries concerned now favor putting soybeans on the free import list. This will take time.

Production and consumption of soybean products including soybean oil, shoyu, miso and tofu likewise show a steady increase.

As a result of our 3 years of promotional activities quite a number of prefectural governments and private organizations as well as individuals have become familiar with and interested in soybean products. They have carried out, at their own expense, programs that have involved meetings, seminars and exhibits

demonstrating the value of soybeans and soybean products.

The following are some of the activities:

1—A food improvement seminar and cooking demonstration by 15 prefectures under the sponsorship of the Ministry of Agriculture featuring soybean oil and protein foods.

2—The majority of the 800 health

centers located in all parts of Japan have carried out repeated cooking demonstrations for groups of housewives, using recipes with soybean products. This is a result of the program which we have under contract with the Japan Nutrition Association.

3—Educational and promotional work by home advisors stationed in the various prefectures belonging to the Ministry of Agriculture and Forestry, as a result of our contract with the Ministry. The home advisors

## ORDERLY MARKETING OF SOYBEANS ASSURES A SOUND INDUSTRY

The general technique of moving soybeans through the normal channels of trade by government assistance in the marketing of the oil fraction is of tremendous significance. It is vastly superior to the system devised primarily for grains and cotton of government *loans and CCC acquisitions*, for the following reasons:

1—The increase in net farm income is greater than any possible government costs.

2—More soybean meal is available at reasonable prices, thus providing better balanced rations and better net returns to livestock and poultry producers.

3—The soybean crop moves into consumption and not into government storage.

4—Exporters and importers of soybeans are commercial buyers in the open market—not “bar-gain hunters” from government hoards.

## LAUHOFF SOYA CO.

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are continuously promoting an increased intake of soybean protein and oil, and housewives in rural areas are beginning to take considerable interest in the subject.

4—A girls' college in the Fukuoka Prefecture has established a group to make a study of soybeans. A high school in Yokohama has decided on the subject of soybeans for study. Hyogo Nutrition School, Kobe, is using our soybean textbook.

5—The public health section of Fukuoka Prefecture has published literature on soybeans and also prepared colored slides to educate people concerning the nutritional values of soybeans and soybean products.

6—Okayama Prefecture published a 38-page booklet on soybeans and cooking now being translated into English.

7—Many daily newspapers are emphasizing the importance of people obtaining more of their protein and fat from soybeans. Yomiuri daily press in a series of articles under the title, "Wonderful Soybean," encourages consumption of miso and tofu. The articles state that people living in areas known as "aged peoples' villages" are eating more than four or five times as much miso soup as the average. People in such areas eat soybeans instead of meat and fish.

8—Tofu sausage sold under the sponsorship of the Japan Tofu Association is becoming so popular that production often does not keep up with consumption.

9—The Japan Broadcasting Station

and the Japan Television Co. have at the Institute's suggestion on occasion included soybean cooking demonstrations with recipes on their nationwide network.

10—Through our various promotional activities more than 1 million people, mostly housewives, have been told directly of the value of soybeans and their products.

The research work now being carried out by the two Japanese scientists at the Northern Regional Research Laboratory at Peoria under contract between the American Soybean Association and USDA's For-

eign Agricultural Service will undoubtedly contribute to further Japanese usage of American soybeans—when such problems as the quality of U.S. beans being unsuitable for Japanese food products may be overcome.

Nearly all Japanese food processors are now using American soybeans. Research to determine the best methods of processing is in progress in Japan as well, but it has not yet reached the stage where U.S. soybeans can be satisfactorily used. We should strive continuously for final success.

## AMERICAN SOYBEAN ASSOCIATION

### F. M. May Decide Export Future

By DAVID R. FARLOW

Assistant to the Executive Vice President,  
American Soybean Association

THE JAPANESE are America's largest buyer of soybeans. Our competitor for the Japanese market is Red China, who is a large producer of soybeans and in the past has been a large supplier to Japan.

Approximately 1 year ago, trade was suspended between Japan and Red China, due to political reasons. At present, trade is still suspended, but this situation will not continue. Red China and Japan are too close, both geographically and economically, to continue a trade suspension.

The Japanese realize that America is a much more dependable supplier of soybeans than Red China, and would prefer buying our soybeans, with one big exception. Our beans contain 2% foreign material, whereas the Chinese beans are almost entirely free of foreign material.

This is due primarily to the difference in cultivation and harvesting. Our highly mechanized methods add to the foreign material contained in our soybeans.

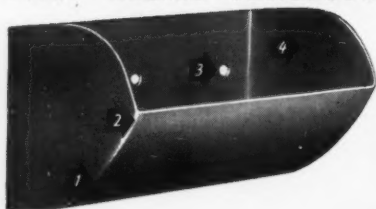
I have recently returned from Japan where I viewed their soybean industry and talked to many manufacturers of food and oil made from American soybeans. Without exception, the first question asked of me was what was being done to reduce the foreign material content in U.S. beans.

The Japanese use soybeans almost entirely for human food. Thus, the great concern on foreign material content. After reviewing firsthand the trouble and money that this foreign material costs the Japanese soybean industry, I fully appreciate their concern.

What we must realize is the fact that the Japanese are our customers. We must supply the customer with what he wants, or lose the business.

Due now to the trade suspension with Red China, Japan, because of necessity, has to buy soybeans from the United States, but, as I stated above, this trade suspension will not continue indefinitely. We must look ahead and be ready to supply Japan with the type of soybeans she desires if we want her business.

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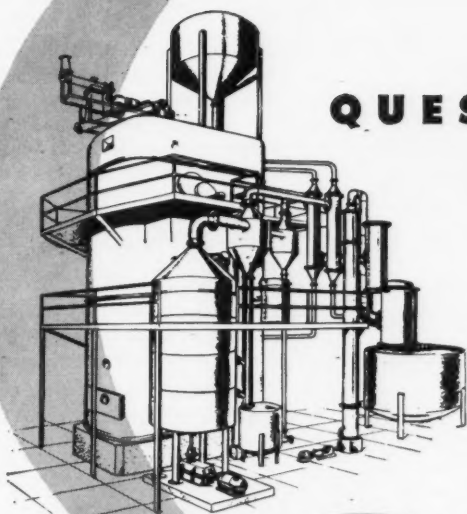
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MAY, 1959

31



H. W. Johnson



J. L. Cartter



E. E. Hartwig

## USDA Issues New Soybean Bulletin

U. S. DEPARTMENT of Agriculture has issued a new bulletin, "Growing Soybeans," that supercedes Farmers' Bulletin 2024, "Soybean Production for Hay and Beans," and Farmers' Bulletin 1520, "Soybeans: Culture and Varieties."

Farmers Bulletin 2129 was written by Herbert W. Johnson, research agronomist for the oilseed and industrial crops research branch at Beltsville, Md.; J. L. Cartter, director U. S. Regional Soybean Laboratory, Urbana, Ill.; and E. E. Hartwig, research agronomist, Delta Branch Experiment Station, Stoneville, Miss.

The 12-page bulletin contains much useful information in small space. As the authors point out, recommendations for growing soybeans vary greatly from state to state and even from county to county. The information given in the bulletin is intended as a general guide and should be supplemented by state and local recommendations.

Soybeans do best on fertile, well-drained soils, but they are tolerant of a wide range of soil conditions. They grow better than many other crops on poor soils.

Soybeans fit well into many systems of crop rotation. A common rotation in the Cornbelt is corn (1 or more years), soybeans, small grains, legumes. In the South, they are commonly used in a rotation with cotton, corn or rice.

Sometimes they are planted after early potatoes and vegetables and after winter grain. Winter grain is often planted following soybeans in some North Central and Southern States.

Soybeans do well after soybeans, but successive crops on the same

land increase the buildup of some disease organisms in the soil.

Although soybeans may be planted with some success from early spring to early summer, the best yields come from plantings made at the proper time.

*Growing Soybeans.* Farmers' Bulletin No. 2129. By Herbert W. Johnson, J. L. Cartter, and E. E. Hartwig. U. S. Department of Agriculture.

TABLE 1.—THE MATURITY, OR COMBINING, DATE OF THE NINE SOYBEAN VARIETY GROUPS WHEN THEY ARE GROWN IN THEIR AREAS OF ADAPTATION

Group	Maturity date (average for group)	Days from planting	Leading varieties—in order of earliness within a group
0.....	Sept. 28	126	Flambeau, Norchief, Capital, Grant, Mandarin (Ottawa).
I.....	Sept. 30	126	Chippewa, Renville, Monroe, Blackhawk.
II.....	Oct. 3	130	Harasoy, Lindarin, Hawkeye.
III.....	Oct. 3	131	Adams, Ford, Shelby, Lincoln.
IV.....	Oct. 7	139	Clark, Wabash, Perry, Scott.
V.....	Oct. 7	136	Dorman, S100, Dortchsoy 67.
VI.....	Oct. 22	148	Hood, Ogden, Lee.
VII.....	Oct. 30	156	Roanoke, Jackson.
VIII.....	Nov. 9	158	Bienville, JEW 45, Improved Pelican.

TABLE 2.—PLANTING DATES FOR SOYBEANS IN MAJOR PRODUCING STATES

States	Maturity classification of varieties grown	For best results, plant on—	Do not plant later than—
Alabama.....	VI, VII, VIII	May 10 to June 15	July 10
Arkansas.....	V, VI, VII	May 1 to 20	June 30
Delaware.....	III, IV, V, VI	May 10 to 30	June 30
Florida.....	VI, VII, VIII	June 1 to 30	July 15
Georgia.....	VI, VII, VIII	May 1 to June 15	July 10
Illinois.....	I, II, III, IV	May 5 to 25	June 30
Indiana.....	I, II, III, IV	May 5 to 25	June 30
Iowa.....	I, II, III	May 1 to 30	June 30
Kansas.....	III, IV, V	May 10 to June 15	June 30
Kentucky.....	IV, V, VI	May 1 to 30	June 30
Louisiana.....	VI, VII, VIII	May 10 to June 15	July 10
Maryland.....	IV, V, VI	May 15 to 30	June 30
Michigan.....	0, I, II	May 5 to 30	June 30
Minnesota.....	0, I, II	May 10 to 30	June 30
Mississippi.....	V, VI, VII	May 1 to June 15	July 5
Missouri.....	II, III, IV, V, VI	May 5 to 30	June 30
Nebraska.....	I, II, III	May 15 to June 5	June 30
North Carolina.....	VI, VII	May 1 to 30	June 30
North Dakota.....	0	May 15 to 30	June 20
Ohio.....	I, II, III	May 5 to 25	June 30
Oklahoma.....	V, VI	May 10 to 30	June 30
South Carolina.....	VI, VII, VIII	May 1 to 20	June 30
South Dakota.....	0, I, II	May 10 to 30	June 30
Tennessee.....	IV, V, VI	May 1 to 25	June 30
Virginia.....	IV, V, VI	May 15 to June 15	June 30
Wisconsin.....	0, I, II	May 5 to 30	June 30

From Farmers' Bulletin 2129

Price 10¢. Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

## Twenty-Six South Dakota Counties Grow Soybeans

TWENTY-SIX South Dakota counties and all districts of that state reported some soybean production in 1958. Production was significant only in the north central, the central and the south central districts, however.

Roberts and Union Counties were the two leaders with 557,000 and 424,700 bushels respectively.

Total state production was just under 3 million bushels, slightly less than 1957 due to drought.

*South Dakota Agriculture 1958.* Agricultural Statistician, 219 W. 8th St., Sioux Falls, S. Dak.

*A Comparison of the Pedigree and Bulk Methods of Breeding Soybeans.* By James H. Torrie. Agronomy Journal. Vol. 50, No. 4, Apr. 1958, pages 198-200.

**PUBLICATIONS**



### Bobsoy Variety Top Yields in Tennessee

BOBSOY VARIETY was the top yielding soybean variety in all locations in Tennessee Experiment Station tests in 1957 and 1958. Lee was second and Ogden third at all locations. All are late-season varieties.

1958 Performance Trials of Field Crop Varieties. University of Tennessee, Agricultural Experiment Station, Knoxville, Tenn.

### Can Grow Soybeans in All Texas Irrigated Sections

SOYBEANS can be grown in all irrigated sections of Texas, but most of the commercial acreage harvested for seed is on the High Plains.

Yields under dry land conditions have been so inconsistent that the crop has not been grown widely.

*Soybeans.* By R. J. Hodges and R. D. Staten. Texas Agricultural Extension Service, College Station, Tex.

### Report Minimum Tillage Works Well in Minnesota

MINIMUM TILLAGE works well on soybeans as on corn, say Minnesota researchers.

Several Minnesota farmers regularly plant soybeans by the wheel track method.

*Where Do We Stand on Minimum Tillage?* By C. J. Overdahl, G. R. Blake, C. A. Van Doren, and R. F. Holt. Minnesota Farm and Home Research. February 1959. University Farm, St. Paul 1, Minn.

### USDA Report on Usage Of Soybeans in Japan

*Use of United States Soybeans in Japan.* ARS-71-12. By Allan K. Smith, Northern Utilization Research and Development Division, Peoria, Ill. Covers Dr. Smith's survey in Japan under market development agreement between the U. S. Department of Agriculture and the American Soybean Association. See also Dr. Smith's report on page 14, October 1958 Soybean Digest.

CHARLES GREVE has joined General Mills as manager of specialty oil sales, oilseeds division. Since 1953 he has been sales and advertising manager for the Lavis Co., Minneapolis. Previous to 1953 he had been manager of fatty acid sales in eastern United States for the chemical division.

### Planned Staley Research Center



AN ARCHITECT'S sketch shows how a new 108,000-square-foot research center will look at the A. E. Staley Manufacturing Co., Decatur, Ill., corn and soybean processor. Construction work is scheduled to start immediately on the center which will house Staley's expanding research program.

### FEEDING

#### Ohio Trial on All-Plant Protein Rations for Pigs

AN OHIO trial has now been carried over a 3-year period, with a total of 78 litters and 755 pigs of the adequacy of all-plant versus plant-and-animal protein rations, at the Ohio Agricultural Experiment Station.

It appears that both types of rations supplied the nutritional needs

of swine through the farrow of fourth generation animals.

Continuous housing on concrete did not result in serious leg weakness in the sows or their pigs.

*A Generation Study of the Adequacy of All-Plant Versus Plant and Animal Protein Rations.* By H. S. Teague and E. A. Rutledge. An. Sci. Mimeo. No. 112, September 1958. Ohio Agricultural Experiment Station, Wooster, Ohio.

# INOCULATE SOY BEANS

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## GRITS and FLAKES... from the World of Soy

### Rentshler Manager Staley Refined Oil Department

Appointment of Delmar F. Rentshler as manager of the refined oil department at the **A. E. Staley Manufacturing Co.**, Decatur, Ill., was announced by E. E. Rhodes, manager of the company's soybean division.



Delmar F. Rentshler

He succeeds Melvin J. Longbons, 38-year veteran employee, who plans to retire June 1.

Rentshler will head Staley's refined oil operations and sales in his new position. The company's refined oil sales organization has branch office distribution points at New York, Cleveland, Chicago and San Francisco, and broker representatives in other areas throughout the country.

Rentshler joined Staley's as a research chemist in 1946.

Longbons started with Staley's in 1920 as an auditing file clerk. He has been manager of the refined oil department since 1955.

Appointment of Eugene R. Weckerly as sales manager for refined oil was announced by **A. E. Staley Manufacturing Co.**, Decatur, Ill.

Weckerly will succeed Delmar R. Rentshler in the refined oil sales post. Rentshler was recently named to head the company's refined oil department.

Weckerly has been assistant sales manager in refined oil for the past 2 years. He joined Staley's management training program in February 1956.



Eugene R. Weckerly

### Hot Spot Detector Adds Four Engineers

Within the last 4 months, **Hot Spot Detector, Inc.**, 214 Third St., Des Moines, Iowa, manufacturer of electronic temperature measuring and engineered aeration systems, has added the services of four new engineers to its research and development department.

William Johnson, Jr., a native Iowan, previous to his appointment

at Hot Spot, was associated with IBM at Poughkeepsie, N. Y.

Kenneth V. Brauns has been project engineer with Remington Rand Univac, St. Paul, Minn. He was also communications engineer with the Department of Defense, Washington, D. C.

LeRoy J. Thompson is another recent addition from Remington Rand, where his activities included work on the Univac Scientific. Prior to his Remington Rand association he was retained by the Neo-Ray Products Co.

Wesley Jones brings to Hot Spot a wealth of electronics experience from B. F. Nelson Mfg., Page Communications and Collins Radio Co.

D. C. Stixrood, president of the Hot Spot organization, reports the additional engineering staff will guarantee continued high quality of the company's line and provide the trade with several needed new products.

### McIntyre Heads Amsco Division

Donald J. McIntyre has been appointed manager of the northern division of the **American Mineral Spirits Co.** with office and storage terminal facilities in the Twin Cities at 40 East Water St., St. Paul, Minn.

He succeeds the late Clyde C. "Mac" McInnes who died recently following a prolonged illness. Mr. McIntyre joined Amsco 6 years ago as a technical representative in the New York and New Jersey area. In 1955 he was promoted to manager of American Mineral Spirit Co.'s new sales office and storage terminal at Baltimore, Md.

As manager of Amsco's northern division he will be responsible for the marketing of Amsco's complete line of technical naphthas and petroleum solvents. He will have charge of Minnesota, the Upper Peninsula of Michigan, North and South Dakota, Montana, parts of Wisconsin and portions of Western Canada.

**McKee Feed & Grain Co.**, Muscatine, Iowa, has moved to its new office building and store at 116 Spring St.



Donald J. McIntyre

### Named Sales Manager for Ralston Soy Division

Joseph F. Voit has been named sales manager of the special soy products division for the **Ralston Purina Co.** and has assumed his duties at the company's general headquarters in St. Louis. W. E. Tjossem is manager of the recently created special soy products division.

Mr. Voit comes to Purina from the chemurgy division of Central Soya Co., Inc., formerly a division of the Glidden Co., where he was eastern sales manager of industrial protein products. Previously he was associated with the Drackett Co.

He has been active in the protein field for the past 12 years in research, market development and sales.

Daiichi Bussan Kaisha, Ltd., and Mitsui Bussan Kaisha, Ltd., two Tokyo, Japan, trading firms, have merged and the new firm is to be known as **Mitsui & Co., Ltd.** The Chicago office has been moved to Room 3419, Board of Trade Bldg. New telephone number is HARRISON 7-6036.

Arthur W. McKee has joined **Archer-Daniels-Midland Co.'s** New York sales office as a sales representative for commodity oils. He formerly was a research assistant at the University of New Hampshire.

A half-million-bushel capacity grain elevator has been formally opened at Osceola, Ark., to handle the big production of soybeans in northeast Arkansas and southeast Missouri. The elevator was built by Chalmers & Borton, Inc., of Hutchinson, Kans., and will be operated by **River Grain Corp.**, Coffeerville, Kans. Manager is J. P. (Gus) Critz.

**The Southern Bearing & Service, Inc.**, Memphis, Tenn., will issue a complete catalog on bearings about June 1, the first catalog of its kind ever issued in the Midsouth, according to Robert E. Neiman. There will be 450 pages illustrated in color, with a comprehensive list of all types of bearings handled by the Memphis firm and their bearing manufacturers.

**The Pidgeon-Thomas Iron Co.**, Memphis, Tenn., has been appointed exclusive distributor for the Republic Rubber Division in the Memphis trade area.

## Hohnen Officials Visit U. S. Soybean Industry

Mitsuo Hirano, managing director, and Ryoji Mamine, assistant research engineer of **Hohnen Oil Co.**, Tokyo, Japan, spent most of April in the



Mitsuo Hirano

United States making a study of the American uses of soybeans.

After several days visiting soybean trade organizations on the West Coast, the visitors spent 10 days in the Midwest where they visited such points of interest as Central Soya Co., Fort Wayne, Ind., the U. S. Food Laboratory in Madison, Wis., and the Northern Utilization Research and Development Division at Peoria, Ill.

At Fort Wayne Hirano and Mamine were the guests of Ersel Walley, chairman of the American Soybean Association market development committee, who helped to arrange their Midwestern schedule.

Enroute east, the Hohnen officials visited food factories in Detroit and the Philadelphia area, and spent several days in New York and Washing-

ton, D. C., in efforts designed to increase the trade in soybeans and soybean products between Japan and the United States.

Following extended visits in England, Holland, Germany and Italy, the men will return to Japan through southeast Asia. In Rome, they will be guests of Fred R. Marti and Dominic Marcello, of the Soybean Council of America.

William Gatz, Sr., president of the **Bertig Co.**, Paragould, Ark., died Mar. 31 following a heart attack. Mr. Gatz had been one of the long-time supporters of the American Soybean Association.

C. W. Schultz, formerly of Fahnestock & Co., Chicago, has been named to head Chicago Board of Trade operations for the **A. E. Staley Manufacturing Co.**, Decatur, Ill. The announcement was made by E. K. Scheiter, Staley president, who said growth in volume of Staley's grain, oil and meal trading made it feasible to open a company operation in Chicago. The office opened May 1 in the Chicago Board of Trade building.

The new soybean processing plant under construction at South Norfolk, Va., by Cargill, Inc., will use the Rotocel solvent extraction system by

the chemical plants division, **Blaw-Knox Co.**, Pittsburgh, Pa.

Aubrey Parish, 53, who recently retired as vice president and director of Pan Atlantic Steamship Corp., Newark, N. J., has been named executive assistant of the **Alabama State Docks** at the Port of Mobile.

Dr. Charles W. Pope, formerly of the staff at Michigan State University, has been named assistant manager of general poultry research for **Ralston Purina Co.** He will headquarter at Purina's general offices in St. Louis.

Edward J. Geise has been appointed manager of commodity sales for the Naugatuck chemical division, **U. S. Rubber Co.** Formerly assistant manager of commodity sales, he replaces Albert W. Holmberg, who retired during February.

Javier de Salas, Spanish director of the **Soybean Council of America, Inc.**, was married to Miss Turid Schjelderup in Madrid on Apr. 29. The reception was attended by many Spanish government officials and by the most important oil businessmen in Spain.

**Archer-Daniels-Midland Co.** has recently completed a new 60-foot hydraulic truck dump at Decatur, Ill.

## ANALYTICAL SERVICE TO THE SOYBEAN INDUSTRY SINCE 1935

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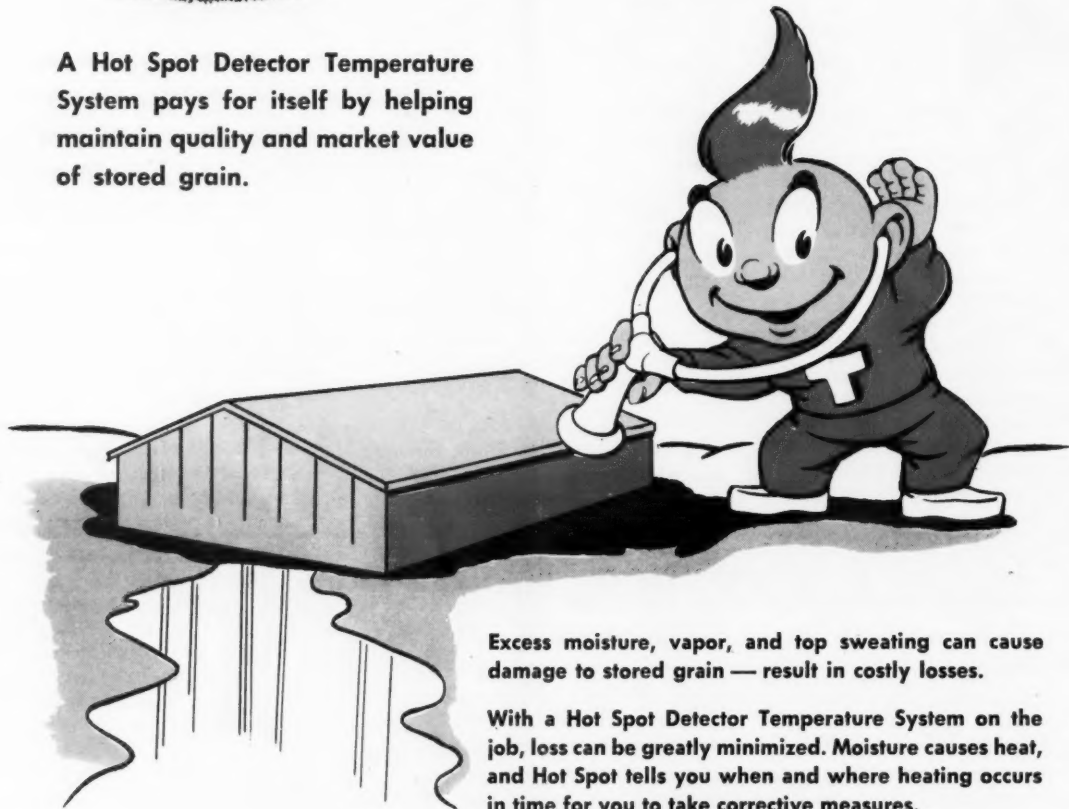


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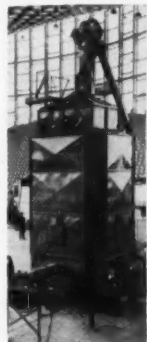
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## NEW PRODUCTS and SERVICES

**DRIER.** The Aeroglide Grain Bank series combines the economy of the various farm driers with the operating advantages of a commercial unit.

The new drier provides a realistic answer for the grain producer faced with a storage risk, elevators faced with batch drying problems, operators who need a "second or standby drier," people who wish to get into grain drying on a limited scale, and at the same time provide for later expansion.



The seven models (batch and continuous flow) have capacities from 264 bushels through 575 bushels. Pricing of the driers will be most attractive to the trade. Fabrication techniques and production line methods, coupled with quantity buying, enable Aeroglide to offer the drier at a price that was entirely impossible a few years back.

For further information write Soybean Digest 5d, Hudson, Iowa.

**PRATER MILL.** To effectively demonstrate and display the Blue Streak Dual Power Advance Custom Mill, Prater has made available to all territories a new display on wheels.

Each sales representative is allotted his turn during the year, giving all territories an equal opportunity to view the actual operation of a Prater Mill.



For further information write Soybean Digest 5a, Hudson, Iowa.

**ELEVATOR CUP SPEEDS.** The benefits of proper elevator cup speed and the damage from improper cup speeds are clearly shown in the slow-motion sequence of a new A. T. Ferrell 16mm sound film.



The film is offered as a public service for showing to groups of seed, grain and feed plant men, educational organizations and state associations.

For a showing send two preferred dates to Soybean Digest 5c, Hudson, Iowa.

**LEVEL INDICATOR.** A new, automatic bin level indicator, especially suited to applications where corrosion and chemical action may be factors, is being introduced by the Bin-Dicator Co.

The new bin level indicator is a supersensitive response mechanism effective for the use with light materials without affecting its performance with heavy materials or for general purposes.

The Auto-Bin-Dicator is the newest in a series of automatic control devices for bulk material handling which the company has been making for nearly a quarter of a century.

For further information write Soybean Digest 5b, Hudson, Iowa.

MAY, 1959

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### \*NOTES FROM BREEZY'S AERATION HANDBOOK...

Air flow rates for grain aeration are measured in cubic feet per minute (cfm) per bushel of grain in storage.

Typical flow rates are in the range of 1/40 to 1/4 cfm per bushel. Grain depth is the main limitation with respect to high air volumes. The time required for cooling depends upon the air rate. 1/10 cfm per bushel uniformly distributed provides a cooling time of 100 to 130 hours, but 1/40 cfm per bushel requires 400 to 500 hours of fan operation.



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## WASHINGTON DIGEST

### Seaway Offers Cheaper Route Abroad

SOYBEANS will be able to move to Europe and the Mediterranean and Middle Eastern areas at rates 12¢ to more than 20¢ a bushel cheaper through the newly opened St. Lawrence Seaway.

This is disclosed in a comprehensive study of the subject by Agricultural Marketing Service economists in the Department of Agriculture. It has just been published as Marketing Research Report No. 319, and is available by writing Washington.

Detailed cost tables are contained in the report showing comparative cost figures for the lowest previous charges between two ports and those when the new seaway is in operation. General areas covered are from the United States to Europe via Rotterdam, to the Mediterranean via Casablanca, Morocco, and to South America via Santos, Brazil. These are some of the comparative cost rates for soybeans, based on use of a Liberty ship through the seaway:

From Duluth, Minn., to Rotterdam, Netherlands—21.43¢ a bushel compared with the lowest previous charge of 35.30¢; estimated saving 13.87¢. Duluth to Casablanca—21.78¢ against 36.10¢. Duluth to Santos 25.73¢ against 41.90¢.

From Decatur, Ill., via Chicago to Rotterdam—31.29¢ compared with

48.91¢, lowest previous charge; saving of 17.62¢. Decatur to Casablanca 31.64¢ against 49.71¢; to Santos 35.39¢ against 55.51¢.

From Toledo, Ohio, to Rotterdam 19.59¢ against 29.03¢ lowest previous charge, saving of 9.44¢. Toledo to Casablanca 19.94¢ against 29.83¢; to Santos 23.99¢ against 35.63¢.

Fort Dodge, Iowa, via Duluth to Rotterdam—33.49¢ compared with 52.05¢ lowest previous cost from this port, saving of 18.56¢. Fort Dodge to Casablanca 33.84¢ against 53.21¢; to Santos, Brazil, 37.79¢ against 59.01¢.

In each case the new seaway route represents the lowest cost, though previous costs have been lower in some cases from other ports.

These rates are based on Liberty ship. Movement in modern lake-ocean bulk carriers which will be on the lakes later on would cost some 3¢ to 4¢ less than the Liberty ship transportation.

There appears to be no advantage in shipping grains over the seaway for delivery on eastern or southeastern points. Costs by present routes are as low.

Minimum channel depth of 27 feet will be completed by midyear between Lake Ontario and Montreal, and Lake Ontario and Lake Erie. Cutting the channel to this depth will take another 3 years on the other lakes. The analysis on cost savings are based on a minimum 27-foot depth throughout the seaway. However, the report says this won't be serious, since large ocean-going boats will be able to get to Ontario ports this summer, and the channel now has a minimum depth of 25 feet "downbound"—outbound from the interior.

#### Oil Outlook

This is the way USDA officials are sizing up the outlook for soybeans and edible oils at this time:

Some feel that the improvement in soybean prices this spring, even though farmers won't have many to sell, may result in a small increase in planted acreage over the 23.6 million indicated in the March report. This represents opinion based on experience rather than any official survey. There will be no official report on acreage until July 10, and no report on production until Aug. 11.

Another big soybean year is ex-



By PORTER M. HEDGE  
Washington Correspondent for  
The Soybean Digest

pected whether the crop is smaller or not. The continued increase in livestock numbers and record breaking use of protein feeds will force another big crushing season, officials think. P. L. 480 and related programs will absorb any additions to the edible oil supply that may result from a larger cotton crop, it's felt.

Poultry eat 50% or more of the soybean meal fed to livestock. Hatchings since Jan. 1 are up 13% from a year ago. The total laying flock was 3% larger and the number of chicks kept for layers so far is 3% greater.

Hogs use about 23% of the soybean meal fed to livestock. Hog numbers are on the climb both this spring and next fall. About 9% more pigs are expected next fall on top of a 10% increase this spring. A further increase is anticipated in 1960.

Beef cattle in 1956 used nearly one-seventh (13%) of soybean meal fed to livestock. Feeding this year has been at a higher rate than last, but the rate is slowing down this spring and should level off about even with a year ago next fall.

Dairy cattle in 1956 used a tenth of soybean meal fed to livestock, and while dairy numbers have been declining moderately, their use of protein feeds has greatly increased.

#### Big Crush

USDA expects meal to be in big demand again next year, and is likely to force a crush in the neighborhood of 400 million bushels for another season to supply livestock requirements.

Output of soybean meal this year is estimated at 9.4 million tons. Last year's total was about 8.3 million tons. Production around 9 million plus is expected in another season, using stocks from Commodity Credit Corp. if necessary.

A record volume of edible oil exports is still anticipated during the coming season. However, the lag in

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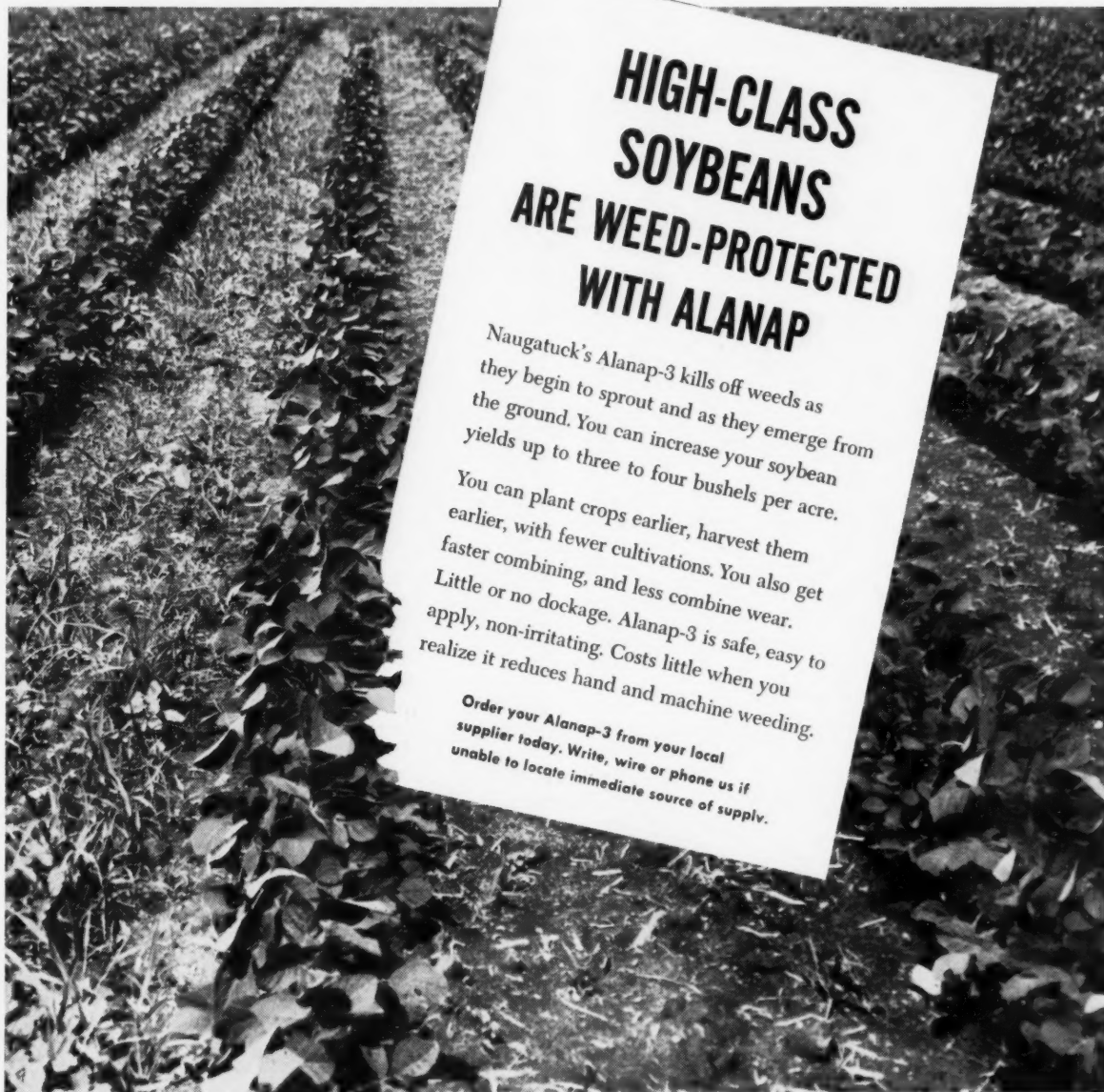
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shipments both to Spain and Turkey has some officials wondering if all the authorizations provided under the P. L. 480 program this year will be picked up during the marketing season.

Total exports are officially listed at 1.5 billion pounds. Of this, 1.2 billion would be under 480 programs. Spain has an agreement to purchase 609 million pounds. Through Mar. 25, 160 million pounds had been lifted. Additional liftings are due in May. Turkey has purchase agreements amounting to 203 million pounds, of which 5 million have been shipped.

There is no question but what these amounts will be taken sooner or later, but it is now considered possible that some liftings might be delayed beyond expiration of the present marketing year.

On the other side, Argentina is wanting some U. S. edible oil to help

tide through a period of shortage due to a serious drought early in the growing season, and heavy rains at harvest time. A sizable volume is involved in the Argentine request.

Nearly 140 million bushels of soybeans have been put under price support through Mar. 31, USDA reported recently. This is approximately 50 million bushels more than the total reported under loan on Mar. 15 a year ago. Nearly 7 million bushels had been redeemed. There were still 6.8 million bushels in inventory.

Commodity Credit Corp. officials expect something like 80 to 90 million bushels of soybeans to be delivered to CCC, with a carryover estimated at 75 million bushels next fall.

A substantial part of the crush of soybeans during the summer months will have to come from beans under loan, officials feel. CCC takes over soybeans on May 31. The announced

sale price is the 1959 loan rate plus 5%.

### Humphrey Bill

The food for peace program advocated by Senator Humphrey of Minnesota is now in bill form and introduced in the Senate. It provides for a 5-year program similar to P. L. 480 and would authorize the use of \$2 billion worth of surplus commodities a year. About \$1 1/2 billion a year are being used now.

The Senator quotes a State Department report prepared by John Davis, a former Assistant Secretary of Agriculture and now a Harvard economist, as saying \$10 to \$13 billion of surpluses were sure to exist in the next 5 years, and could be distributed without disruption to regular trade through a P. L. 480 type of operation.

There is little chance of the Humphrey bill becoming law this year or next. USDA is opposed to a longtime program of the P. L. 480 type, but considers it useful as an emergency program.

Clyde Hendrix, a former official of Pillsbury Mills, is wanted by USDA to succeed the late Frank Daniels as sales manager for Commodity Credit Corp. Mr. Hendrix is currently an assistant to Leo Hoegh, director of Civil Defense Administration, though he is a native of Clinton, Iowa.

### Oil Mill Association to Meet at Biloxi June 7-9

PLANS for the 34th annual convention of the Tri States Oil Mill Superintendents Association June 7-8-9 at the Buena Vista Hotel, Biloxi, Miss., have been announced by E. S. Lyle, superintendent, Dyersburg Oil Mill, Dyersburg, Tenn., who is convention chairman.

The president's address will be by Roy Castillow, Southern Cotton Oil Division, Wesson Oil & Snowdrift, Little Rock, Ark.

J. Howard Waldron, Sprout, Waldron & Co., Muncy, Pa., will speak on, "Quality Controls of Oilseed Meals."

Frank McDonald, Planters Manufacturing Co., Clarksdale, Miss., is first vice president; R. E. Smith, Yazoo Valley Oil Mill, Inc., Greenwood, Miss., second vice president; O. D. Easley, Southern Cotton Oil Division, Wesson Oil & Snowdrift, Memphis, Tenn., secretary-treasurer; and Mrs. Easley, corresponding secretary.

## - MARKET STREET -

We invite the readers of THE SOYBEAN DIGEST to use MARKET STREET for their classified advertising. If you have processing machinery, laboratory equipment, soybean seed, or other items of interest to the industry, advertise them here. Rate 10c per word per issue. Minimum insertion \$2.00.

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**WANTED: FLAKING AND CRACK-**ing rolls, meal coolers and driers and roller mills. Soybean Digest, Box 319-J, Hudson, Iowa.

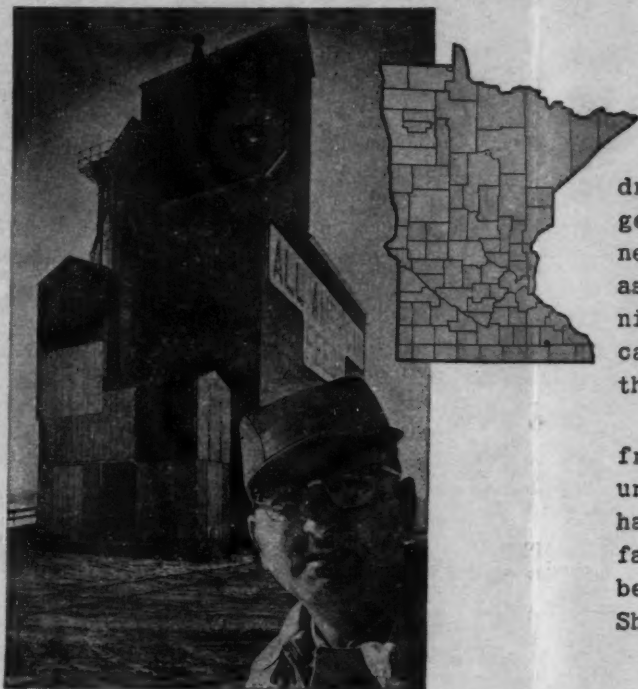
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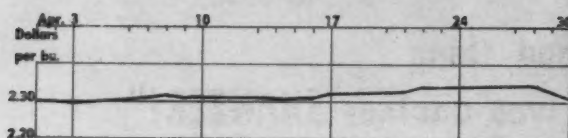


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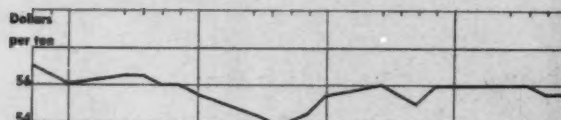




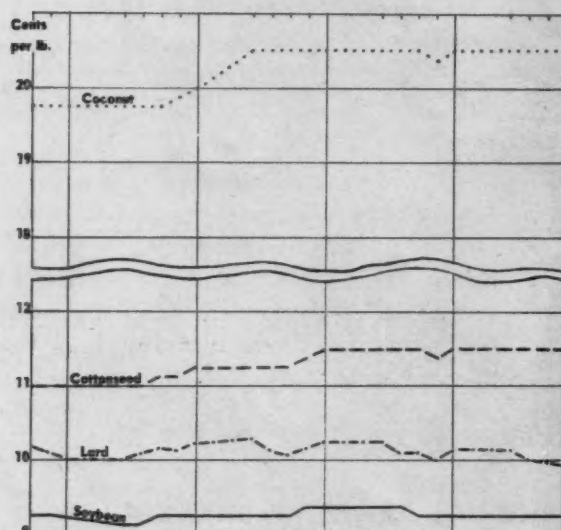
### DAILY MARKET PRICES No. 1 Cash Soybeans, Chicago



### Bulk Soybean Oil Meal, Decatur



### Crude Vegetable Oils and Lard



## April Markets

**STRENGTH** in the bean market was April's main feature. Beans gained almost 5¢ during the month, finally rising above the level of a year ago, and there were fluctuations in the meal and oil markets with little net change.

The strength in demand for beans was mainly due to the conclusion that producer-held soybeans will not cover processor requirements to the end of the year and that processors will depend on Commodity Credit Corp. for supplies. Country bidding forced beans in some areas up to loan level plus storage.

It was also noted that farmers have the resealing privilege on soybeans for the first time this year and can earn storage charges by continuing to hold old-crop soybeans on the farm.

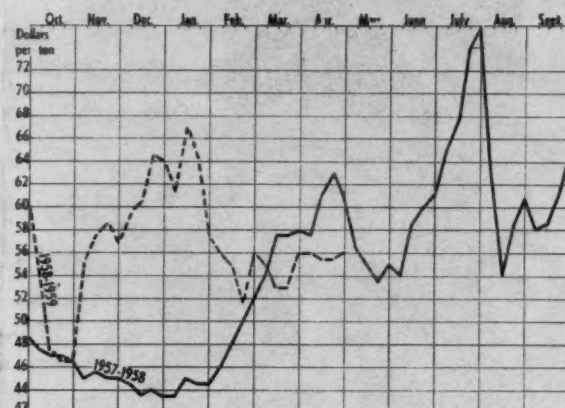
The opening of the St. Lawrence Seaway increased the expectation of stepped-up Canadian and other export demand with possible further declines in Chicago stocks.

Soybean meal consumption continued at a record rate and was expected to increase during the spring feeding season.

### TRENDS AT A GLANCE (Weekly Close) No. 1 Cash Soybeans, Chicago



### Bulk Soybean Oil Meal, Decatur



### Crude Soybean Oil, Tankcars



There was some reported temporary curtailment of production by processors but this did not show up in the Bureau of the Census crushing report for March.

Coconut oil soared to 20½¢ a pound, the highest since March 1953.

**BYPRODUCTS.** The price of soybean fatty acids remained at 15¼¢ per pound during April. Acid soybean soap stock advanced from 5¼¢ to 5½¢, and raw soybean soap stock from 1½¢ to 1¾¢ per pound.

### 1957 AND 1958 SOYBEAN CROPS

	1958-59	1957-58
Total soybeans placed under price support as of Mar. 31 .....	139,760,000 bu.	90,435,000 bu.*
Total soybeans withdrawn from support as of Mar. 31 .....	6,978,000 bu.	2,151,000 bu.
Total remaining under support ..	132,779,000 bu.	88,284,000 bu.*
Soybeans crushed Oct. 1-Apr. 1 .....	208,107,000 bu.	174,773,000 bu.
Total soybeans inspected for overseas export plus lake shipments to Canada Oct. 1-Apr. 24 .....	67,276,786 bu.	60,619,462 bu.
Balance on hand Apr. 1 for processing, export or carryover	295,635,000 bu.	231,728,000 bu.

\* Mar. 15

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## IN THE MARKETS

**EXPORTS.** Exports of expressed vegetable oils and oilseeds decreased from \$452 million to \$390 million in calendar year 1958, reports Foreign Agricultural Service, U. S. Department of Agriculture. Tighter domestic supplies of cottonseed oil were largely responsible for the decline, but less linseed oil and flaxseed oil also moved out. Exports of soybean oil were larger; those of soybeans were smaller.

U. S. exports of food for relief and charity by private agencies and individuals, calendar years 1957 and 1958

	Year ending Dec. 31			
	Quantity		Value	
	1957	1958	1957	1958
	Unit	Thousands	1,000 dollars	1,000 dollars
Soybean oil .....	lb.	126	0	20
				0

U. S. exports of principal agricultural commodities, calendar years 1957 and 1958<sup>1</sup>

	Unit	Year ended Dec. 31			
		Quantity		Value	
		1957	1958	1957	1958
		Thou-	Thou-	1,000	1,000
		sands	sands	dollars	dollars
Soybeans, except					
canned (60 lb.) .....	bu.	87,961	84,333	217,679	198,300
Soybean oil, crude,					
refined, etc. ....	lb.	685,002	871,786	105,094	122,154
Cottonseed oil,					
crude, refined, etc. ....	lb.	412,293	160,851	62,357	25,979

<sup>1</sup> Preliminary. Compiled from official records, Bureau of the Census.

**EXPORTS.** Preliminary data on U. S. exports of soybeans and soybean oil for February 1959, with comparable data for February 1958 and cumulative totals for the marketing years 1957-58 and 1958-59, reported by Foreign Agricultural Service, U. S. Department of Agriculture.

	Unit	February		October-February	
		1958	1959	1957-58	1958-59
Soybeans .....	bu.	3,904,925	8,399,862	50,351,606	55,753,863
Soybean oil:					
Crude .....	lb.	3,939,938	323,152	59,143,979	105,816,819
Refined but not					
further processed ....	lb.	9,136,913	1,172,824	60,326,354	14,255,626
Refined, deodorized					
and hydrogenated ..	lb.	1,819,314	6,997,901	46,746,809	143,497,631

Soybeans: Inspections for export by ports and lake shipments to Canada March 1959 (1,000 bu.)

Atlantic		Mobile	
Philadelphia .....	112	Port Allen .....	1,020
Baltimore .....	447	Subtotal .....	2,930
Norfolk .....	884	Totals .....	
Subtotal .....	1,443	March 1959 .....	4,373
		Jan.-March 1959 .....	21,012
		Jan.-March 1958 .....	14,661
Gulf			
New Orleans .....	1,447		

Based on weekly reports of inspections for export by licensed inspectors and does not include rail and truck movement to Canada or Mexico.

Soybeans: Inspections for export by coastal areas and country of destination, March 1959 (1,000 bu.)

Atlantic		West Indies	
Norway .....	297	Denmark .....	344
United Kingdom .....	93	United Kingdom .....	53
The Netherlands .....	462	The Netherlands .....	741
Belgium .....	37	Belgium .....	63
West Germany .....	140	West Germany .....	602
Israel .....	363	Japan .....	1,065
Japan .....	34	Subtotal .....	2,930
Other .....	17	Grand total .....	4,373
Subtotal .....	1,443	Total Jan.-Mar. 1959 .....	21,012
		Total Jan.-Mar. 1958 .....	14,661
Gulf			
Cuba .....	18		

Note: Data are based on weekly reports of inspections for export by licensed inspectors and do not include rail or truck movement to Canada or Mexico. In some cases the ultimate destination is not shown on the inspection reports, therefore, the quantity of each country may vary from official Census data which are based on custom declarations.

Title I, P. L. 480 shipments July 1958-March 1959 (pounds)

March 1959		July 1958-March 1959	
Metric tons	Quantity	Metric tons	Quantity
Cottonseed oil .....	50	111,000	1,375
Soybean oil .....	20,917	46,114,000	213,477
			470,637,000

**FACTORY USE VEGETABLE OILS** for February 1959. Reported by Bureau of the Census.

Fats and oils production and consumption in selected products; factory and warehouse stocks: February 1959 (million pounds)

	Production	Factory consumption					
		Consumed in selected products <sup>2</sup>					
		Edible products <sup>3</sup>					
		Crude vegetable oils, animal and fish fats	Refined vegetable oils <sup>1</sup>	Consumed in refining <sup>1</sup>	Total	Baking or frying fats	Salted or cooking oils
Cottonseed oil .....	162.2	113.9	121.3	96.7	28.0	53.4	12.9
Soybean oil .....	355.3	301.9	313.5	276.8	96.3	60.7	102.8
Vegetable oil foots .....	19.0			11.8			2.0

	Production	Factory consumption					
		Consumed in selected products <sup>2</sup>					
		Inedible products <sup>4</sup>					
		Soap	Paint or varnish	Fatty acids	Other inedible <sup>4</sup>	Total	Crude
Cottonseed oil .....				0.2	433.3	162.5	270.8
Soybean oil .....			7.1	7.5	455.2	243.3	211.9
Vegetable oil foots .....		2.1	0.1	7.2	2.3	49.2	

Note: Detail figures may not add to totals because of independent rounding. <sup>1</sup> Usage of crude oils in refining (alkali or caustic washing) is shown only for major vegetable oils. Production of refined oils covers only once-refined oils. Separate data on crude and refined oils are no longer collected for oils other than those specified. Degummed soybean oil is reported as crude oil. <sup>2</sup> Includes hydrogenated fats (vegetable and animal) and other fats and oils "in process," (e.g. refined cottonseed oil includes stearin, hydrogenated or otherwise). <sup>3</sup> Includes confectioners' fat and similar products. <sup>4</sup> Quantities consumed in making the following products include: Animal feeds: total 25.1, inedible tallow and grease 23.5, lubricants and similar oils (including quantities consumed in greases, cutting oils, dielectric oils, core oils, brake fluids, and metal-working): total 7.2, inedible tallow and grease 6.0, marine mammal 1.2, resins and plastics: total 11.1, soybean 5.1, linseed 1.5, castor 3.4, linoleum: total 2.3, linseed oil 2.3.

Food fats and oils: Supply and disposition, 1952-59<sup>1</sup> (million lbs.)

	Year beginning October						Forecast <sup>2</sup>	
	1952	1953	1954	1955	1956	1957	1958	1959
Stocks, Oct. 1								
Soybeans—								
oil equiv. ....	36	109	14	108	41	109	231	800
Cottonseed oil ..	393	1,016	896	361	254	146	121	405
Soybean oil .....	194	174	127	179	227	286	231	
Imports .....	45	61	91	57	49	68	50	
Production								
Cottonseed oil <sup>2</sup> ..	1,840	2,106	1,723	1,893	1,629	1,418	1,525	
Soybean oil .....	2,536	2,350	2,711	3,143	3,431	3,800	4,250	
Soybean exports—								
oil equiv. ....	320	436	666	741	937	939	975	
Total supply .....	10,246	11,107	11,470	11,885	11,681	11,549	12,350	
Exports <sup>3</sup>								
Cottonseed oil <sup>2</sup> ..	55	402	716	617	427	250	400	
Soybean oil .....	93	71	50	556	807	803	1,100	
Soybeans—								
oil equivalent ..	320	436	666	741	937	939	975	
Domestic use								
Cottonseed oil ..	1,162	1,824	1,543	1,384	1,310	1,193	1,125	
Soybean oil .....	2,462	2,326	2,609	2,539	2,565	3,052	3,100	

<sup>1</sup> Totals computed from unrounded numbers. <sup>2</sup> Includes oil equivalent of oilseeds exported for crushing. <sup>3</sup> Includes shipments. Cottonseed oil and adjustments include quantities from CCC stocks that are not reported in Census data. <sup>4</sup> Except for stocks on Oct. 1, 1958. Agricultural Marketing Service.

Consumption of vegetable oils in fatty acids (million pounds)

	Total consumption		Used in fatty acids		Percent used in fatty acids					
	Cum:		Cum:		Cum:					
	Feb.	Jan.-Feb.	Feb.	Jan.-Feb.	Feb.	Jan.-Feb.	Feb.	Jan.-Feb.	Feb.	Jan.-Feb.
1959 1958 1959 1958	1959 1958	1959 1958	1959 1958	1959 1958	1959 1958	1959 1958	1959 1958	1959 1958	1959 1958	1959 1958
Vegetable oil										
foots .....	11.8	11.6	23.7	23.1	7.2	6.3	14.5	12.2	61%	54%
U. S. Bureau of the Census										



**STOCKS.** Soybean stocks of 323 million bushels in all storage positions on Apr. 1 were the largest of record for the date and a fourth larger than a year earlier, the previous record, USDA's Agricultural Marketing Service reports. Farm, terminal, processor and elevator and warehouse stocks were all above Apr. 1, 1958, and record for the date.

Stocks on Apr. 1 indicate a disappearance during the 6 months, October 1958-March 1959, of 272 million bushels from a supply of 595 million bushels. The supply consisted of a carryover of 21 million bushels plus the 1958 production of 574 million bushels. During the period 208 million bushels were processed for oil and about 62 million bushels were exported for a known disappearance of 270 million bushels. In addition, soybeans fed probably amounted to at least 1 million bushels. Thus the indicated and known disappearance are in close balance.

Stocks of soybeans, Apr. 1, 1959, with comparisons (1,000 bu.)

	Apr. 1 av. 1948-57	Apr. 1 1958	Jan. 1 1959	Apr. 1 1959
On farms <sup>1</sup>	62,630	117,445	199,925	124,623
Terminals <sup>2</sup>	9,936	17,977	42,767	26,839
Commodity Credit Corp. <sup>3</sup>	85	0	1,954	1,895
Processing plants <sup>5</sup>	45,809	57,983	98,610	73,300
Int. mills, elev. & whses. <sup>1,4</sup>	24,831	62,301	126,005	96,031
Total	143,291	255,706	469,261	322,688

<sup>1</sup> Estimates of the crop reporting board. <sup>2</sup> Commercial stocks reported by grain division, AMS, at 44 terminal cities. <sup>3</sup> Owned by CCC and stored in bins or other storages owned or controlled by CCC; other CCC-owned grain is included in the estimates by positions. <sup>4</sup> All off-farm storages not otherwise designated, including merchant mills. <sup>5</sup> Firms reporting crushings and stocks of soybeans to the Bureau of the Census.

	Soybeans		Total <sup>2</sup>	
	Off-farm total <sup>1</sup> Apr. 1	1958	all positions Apr. 1	1959
Ohio	12,043	15,563	19,560	23,431
Indiana	7,141	.....	19,391	.....
Illinois	43,823	51,579	73,897	82,459
Minnesota	19,450	20,783	39,179	38,042
Iowa	25,278	36,267	51,993	65,374
Missouri	5,582	11,421	12,234	20,290
North Carolina	940	2,737	1,998	4,065
Tennessee	.....	13,449	.....	14,746
Other <sup>*</sup>	24,004	46,266	37,454	74,281
U. S.	138,261	198,065	255,706	322,688

<sup>\*</sup> Other states and unallocated—to avoid disclosing individual operations. <sup>1</sup> Includes stocks at interior mills, elevators and warehouses, commercial stocks reported by grain division, AMS, at terminals and those owned by Commodity Credit Corp. which are in bins and other storages under CCC control. <sup>2</sup> Off-farm total plus farm stocks.

**STOCKS ON FARMS.** Soybean stocks on farms Apr. 1 totaled a record 125 million bushels, according to the U. S. Department of Agriculture crop reporting board. This exceeds by 7 million bushels the previous record stocks last Apr. 1 and is almost double the 1948-57 average for this date.

Stocks on farms were heavily concentrated in the North Central States which account for 91% of the U. S. total. Supplies for seed are expected to be ample in all producing states.

Soybean stocks on farms on Apr. 1, (1,000 bushels)

	Average				Average		
	1948-57	1958	1959		1948-57	1958	1959
N. Y.	26	27	26	Md.	281	360	361
N. J.	120	185	135	Va.	506	514	363
Pa.	120	82	46	N. C.	845	1,058	1,328
Ohio	5,878	7,517	7,868	S. C.	324	1,086	1,066
Ind.	8,136	12,250	11,102	Go.	106	196	146
Ill.	17,537	30,074	30,880	Fla.	122	83	58
Mich.	704	2,077	2,255	Ky.	408	400	348
Wis.	237	858	800	Tenn.	373	547	1,297
Minn.	7,434	19,729	17,259	Ala.	72	171	163
Iowa	11,810	26,715	29,107	Miss.	739	993	1,288
Mo.	4,082	6,652	8,869	Ark.	931	1,950	3,723
N. Dak.	202	1,027	1,175	La.	78	200	86
S. Dak.	501	982	1,042	Okla.	43	51	121
Nebr.	285	767	1,669	Texas	4	43	83
Kans.	577	468	1,760	U. S.	62,630	117,445	124,623
Del.	253	383	199				

<sup>1</sup> Short-time average. Crop reporting board, AMS, USDA.

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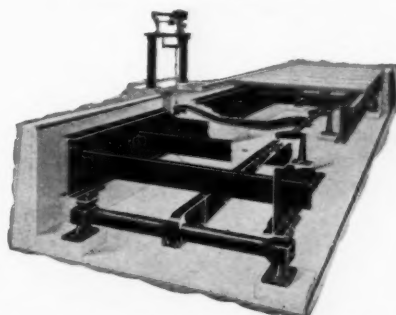
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# PROCESSING OPERATIONS. Reported by Bureau of the Census for February and March 1959.

Primary products except crude oil at crude oil mill locations: Production, shipments and transfers, and stock, March 1959-February 1959 (1,000 tons)

	Production		Shipments and transfers		Stocks end of month	
	March 1959	February 1959	March 1959	February 1959	March 31, 1959	February 28, 1959
Soybean:						
Cake and meal	838.7	787.7	830.1	768.1	93.3	84.7
Millfeed (hull meal)	13.1	12.3	13.2	12.4	2.9	3.0

Soybeans: Net receipts, crushings, and stocks at oil mills, by states, March 1959-February 1959 (1,000 tons)

	Net receipts of mills <sup>1</sup>		Crushed or used		Stocks at mills	
	March 1959	February 1959	March 1959	February 1959	March 31, 1959	February 28, 1959
U. S.	685.8	783.2	1,080.3	1,019.0	2,199.0	2,593.5
Illinois	247.8	272.2	337.5	319.1	564.0	653.7
Indiana	(2)	67.4	93.6	86.8	(2)	257.3
Iowa	123.6	118.9	167.0	161.1	170.8	214.2
Kansas	(2)	(2)	(2)	(2)	(2)	(2)
Kentucky	(2)	(2)	(2)	(2)	(2)	(2)
Minnesota	71.2	69.5	90.3	75.6	90.5	109.4
Missouri	21.4	(2)	(2)	(2)	114.4	(2)
Nebraska	(2)	(2)	(2)	(2)	(2)	(2)
North Carolina	3.6	1.6	4.3	5.3	57.9	58.6
Ohio	38.1	64.1	99.8	98.6	258.3	320.1
Tennessee	83.2	64.3	101.6	95.1	291.2	309.6
All other	96.9	125.2	186.2	177.4	651.9	670.6

<sup>1</sup> Net receipts for each state are derived from the quantity of beans crushed and net change in stocks. <sup>2</sup> Included in "All other" to avoid disclosure of figures for individual companies. Detail figures may not add to totals because of independent rounding.

Soybeans products: Production and stocks at oil mill locations, by states, March 1959-February 1959

	Crude oil (millions of pounds)				Cake and meal (thousands of tons) <sup>1</sup>			
	Production		Stocks		Production		Stocks	
	March 1959	February 1959	March 31, 1959	February 28, 1959	March 1959	February 1959	March 31, 1959	February 28, 1959
U. S.	380.8	355.3	116.8	118.5	851.8	800.0	96.2	87.7
Illinois	121.0	114.6	36.6	23.0	226.1	245.9	29.0	27.9
Indiana	32.5	29.8	(3)	(3)	74.0	69.2	(3)	(3)
Iowa	59.3	55.3	16.3	28.2	135.8	128.0	15.0	11.8
Kansas	(3)	(3)	2.8	3.0	(3)	(3)	(3)	(3)
Kentucky	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Minnesota	31.3	25.2	18.8	21.9	71.7	59.3	5.6	4.5
Missouri	(3)	(3)	2.0	3.0	(3)	(3)	(3)	1.9
Nebraska	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
N. Carolina	1.0	1.4	0.2	0.7	3.6	4.3	0.8	0.8
Ohio	33.7	32.9	8.7	7.1	80.0	79.3	5.2	7.6
Tennessee	36.8	34.1	13.0	10.4	79.5	74.0	7.5	8.4
All other	65.2	62.0	18.4	21.2	145.9	140.0	33.1	24.8

Note: Detail figures may not add to totals because of independent rounding. <sup>1</sup> Include millfeed (hull meal). <sup>2</sup> Includes 4.8 thousand tons of millfeed. <sup>3</sup> Included in "All other" to avoid disclosure of figures for individual companies.

**PRICE SUPPORT.** Quantities of 1958-crop soybeans reported under support through March 1959, compared with 1957-crop soybeans through Mar. 15, a year earlier (bushels)

Warehouse-stored loans	Form-stored loans	Total under support through Mar. 31, 1959 (including purchase agreements)	Total under support through Mar. 15, 1958
74,026,952	51,742,721	139,759,775	90,434,842

Purchase agreement totals included in the above totals include 13,990,102 bushels. Of the quantities of 1958-crop soybeans put under support farmers had repaid loans as reported through March on 6,978,075 bushels.

Soybeans: CCC-owned stocks, Mar. 31, 1959 (1,000 bu.)

Ohio	6	Mo.	247
Ind.	6	N. Dak.	126
Ill.	918	S. Dak.	72
Wis.	428	Nebr.	13
Minn.	1,210	Dallas area <sup>1</sup>	34
Iowa	7,132	Total	10,192

<sup>1</sup> In transit. CSS, grain division.

Soybeans: Amount under price support by states Mar. 31. Cumulative report. (bushels)

	Quantity of loans repaid		Quantity of loans and purchase agreements outstanding			
	Form	Total <sup>1</sup>	Warehouse	Form	Purchase agreements	Total
Ala.	20,803	20,803	0	36,722	0	36,722
Ark.	1,854,635	1,890,852	6,725,893	1,759,273	307,523	8,792,689
Del.	174	174	0	2,892	1,200	4,092
Fla.	.....	.....	0	203	0	203
Ga.	16,660	25,772	50,072	12,250	0	62,322
Ill.	383,788	471,436	16,029,700	7,767,029	5,462,483	29,259,212
Ind.	365,457	414,650	1,260,889	2,633,754	858,413	4,753,056
Iowa	401,183	549,155	22,088,669	16,917,456	3,558,274	42,564,399
Kan.	174,807	178,360	454,100	669,434	67,021	1,190,555
Ky.	512	46,385	244,958	155,661	17,186	417,805
La.	16,621	16,621	36,783	33,040	1,200	71,023
Md.	666	666	0	2,780	0	2,780
Mich.	3,931	3,931	401,778	216,069	291,198	909,045
Minn.	222,901	535,799	12,524,558	8,125,816	1,278,307	21,928,681
Miss.	398,408	469,019	976,927	579,045	79,171	1,635,143
Mo.	1,211,632	1,565,189	4,975,930	3,239,381	614,377	8,829,688
Nebr.	24,750	41,727	999,024	1,045,853	235,447	2,280,324
N. J.	13	13	0	8,718	1,000	9,718
N. M.	0	6,883	13,416	1,624	0	15,040
N. Y.	.....	.....	0	0	1,130	1,130
N. C.	14,847	14,847	590	77,849	2,300	80,739
N. D.	9,444	37,151	734,941	650,328	324,859	1,710,128
Ohio	71,065	71,467	2,175,665	1,281,994	618,951	4,096,610
Okl.	54,540	58,376	392,577	86,429	0	479,006
Pa.	1,383	1,383	489	395	500	1,384
S. C.	112,388	390,360	691,846	243,403	5,000	940,249
S. D.	13,700	32,441	201,451	406,960	101,228	709,639
Tenn.	38,438	38,438	786,764	214,546	128,267	1,129,579
Tex.	1,469	78,086	560,709	36,794	11,940	609,443
Va.	17,789	17,789	89,548	20,915	4,800	115,263
Wis.	.....	.....	42,326	82,299	18,325	142,950
Total	5,432,004	6,978,073	72,479,603	46,308,912	13,990,102	132,778,617

<sup>1</sup> Of above total 1,546,069 bushels are for warehouse.

**STOCKS.** Agricultural Marketing Service's commercial grain stocks reports for close of business on Friday or Saturday preceding date of report (1,000 bu.)

	Mar. 31	Apr. 7	Apr. 14	Apr. 21
U. S. soybeans in store and afloat at domestic markets				
Atlantic Coast	2,734	2,460	2,012	1,490
Gulf Coast	1,131	1,163	2,278	1,661
Northwestern and Upper Lake	2,280	2,158	1,825	1,734
Lower Lake	13,554	13,219	12,690	12,812
East Central	6,347	6,534	6,241	5,852
West Central				
Southwestern & Western	2,969	3,056	2,885	2,694
Total current week	29,015	28,590	27,931	26,243
Total year ago	18,472	16,558	15,202	16,238
U. S. soybeans in store and afloat at Canadian markets				
Total current week	176	136	103	65
Total year ago	1	0	0	0
Total North American commercial soybean stocks				
Current week	29,191	28,726	28,034	26,308
Year ago	18,473	16,558	15,202	16,238

Primary receipts (1,000 bu.) of soybeans at important interior points for week ending:

	Mar. 27	Apr. 3	Apr. 10	Apr. 17
Chicago	137	332	212	281
Indianapolis	10	12	6	25
Kansas City	55	34	52	28
Minneapolis	95	102	42	17
Omaha	28	26	13	20
Peoria	29	27	44	9
Sioux City	2	19	22	19
St. Louis	10	2	4	6
Toledo	59	51	50	66
Totals	425	605	445	471
Last year	958	858	1,173	1,265
Total Chicago soybean stocks	10,589	10,479	10,423	10,128

**INSPECTIONS.** Soybeans inspected by grade and percent, reported by Agricultural Marketing Service.<sup>1</sup>

Grade	March 1959 <sup>2</sup>	February 1959	March 1958	Oct.-Mar. 1958-59	Oct.-Mar. 1957-58
	1,000 bu. Pct.	1,000 bu. Pct.	1,000 bu. Pct.	1,000 bu. Pct.	1,000 bu. Pct.
No. 1	6,552 31	5,596 28	6,472 33	62,999 24	50,548 22
No. 2	9,873 47	9,718 49	7,957 41	123,065 47	98,650 42
No. 3	2,886 14	3,020 15	3,412 18	49,997 19	58,086 25
No. 4	1,129 5	973 5	1,025 5	18,560 7	20,378 9
Sample	702 3	461 3	491 3	6,228 3	5,960 2
Total	21,142 100	19,768 100	19,357 100	260,849 100	233,622 100

<sup>1</sup> Carlot receipts have been converted to bushels on the basis that 1 carlot equals 1,750 bushels. <sup>2</sup> Of the March receipts, 400 bushels were black, and the remainder yellow soybeans. Inspections of soybeans in March included 4,523,992 bushels as cargo lots, 1,537,491 bushels as truck receipts, and the balance as carlot receipts. Based on reports of inspections by licensed inspectors at all markets.



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